

# Service Manual

Colour Video Projector

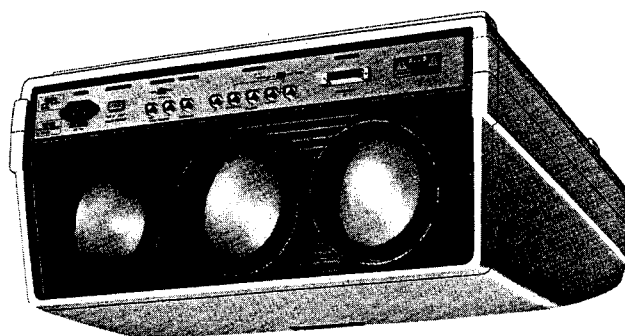
PT-102N/GN/AN/SN

**chassis No. Q5**

GN ..... U. K. Only

AN ..... Australia Only

SN ..... Saudi Arabia Only



The service technician is required to read and follow the "Safety Precautions" and "Important Safety Notice" in this service manual.

## Specifications

Power Source:	AC 220V ~ 240V, 50/60 Hz (PT-102N/102SN) AC 240V, 50 Hz (PT-102GN/102AN)	72" (1829 mm) Picture size: 87.0 inches (2210 mm) 100" (2540 mm) Picture size: 119 19/32 inches (3037 mm) 120" (3048 mm) Picture size: 143 3/32 inches (3635 mm) 500 lumens typical (at white peak)
Power Consumption:	179W (average)	
Projection Tube:	7 inches (179 mm) specially developed High-Brightness liquid cooled CRTs (R, G, B).	
Lenses:	F 1.0 f145 Three Lenses (HYBRID)	Light Flux:
Resolution:	Video..... 650 TV Lines (typical) RGB..... 1000 TV Lines (typical)	Operating Ambient Temperature: 32°F ~ 104°F (0°C ~ +40°C)
Video Input Level:	1 ± 0.3Vp-p 75Ω	Operating Ambient Humidity: 20% ~ 80%
Line in/out Level:	1 ± 0.3Vp-p 75Ω or high impedance	Supplied Accessories: AC Cord Mounting kit (1 set) SPACER G: TMX13917, TMX13919 B, R: TMX13918, TMX13920
RGB Input Level	R: 0.7 ± 0.3Vp-p 75Ω G: 0.7 ± 0.3Vp-p 75Ω (G SYNC: 1 ± 0.3Vp-p 75Ω) B: 0.7 ± 0.3Vp-p 75Ω H · H/V: 0.3 ~ 6V, high impedance V: 0.3 ~ 6V, high impedance	Dimensions: Height: 290 mm (11 13/32 inch) Width: 576 mm (22 11/16 inch) Depth: 60.0 mm (23 29/32 inch)
Screen Size:	1270 ~ 3048mm (50 ~ 120 inch)	Weight: 77 lbs. (35 kg)
Throw Distance:	50" (1524 mm) Picture size: 65 3/4 inches (1670 mm)	

Specifications are subject to change without notice.  
Weight and dimensions shown are approximate.

# Panasonic

**Matsushita Electric Trading Co., Ltd.**  
P.O. Box 288, Central Osaka Japan

## CONTENTS

FEATURES .....	2
SAFETY PRECAUTIONS .....	3
LOCATION OF CONTROLS, OPERATIONS AND CONNECTION OPTIONAL EQUIPMENT .....	4 ~ 8
DISASSEMBLY INSTRUCTIONS .....	9, 10
MAIN PARTS LOCATION CHART .....	11
CAUTIONS FOR SERVICING .....	12, 13
FIELD ADJUSTMENTS .....	14 ~ 20
INSTALLATION/ADJUSTMENT PROCEDURE .....	21 ~ 34
LOCATION OF TEST POINT AND CONTROLS .....	35 ~ 37
BLOCK DIAGRAM .....	38 ~ 40
INTERCONNECTION .....	41 ~ 42
TERMINAL GUIDE OF IC'S, TRANSISTOR AND DIODES .....	43
CIRCUIT BOARD .....	44 ~ 56
SCHEMATIC DIAGRAM	
F/K/P/Q/V/X-BOARD Sections .....	59, 60
M-BOARD Section .....	61, 62
B/S/LR/LG/LB-BOARD Section .....	63 ~ 66
C/J/TR1/TR2-BOARD Sections .....	67 ~ 70
C/D/Y/Z/H1/H2-BOARD Sections .....	71 ~ 73
A/G/R/T-BOARD Sections .....	74 ~ 76
EXPLODED VIEWS .....	77 ~ 82
TROUBLESHOOTING .....	83, 84
REPLACEMENT PARTS LIST .....	85 ~ 112

## FEATURES

- |  |   |
|--|---|
| <p>1 Superb bright picture: High luminance output:<br/>500 lumens (typical, at white peak)</p> <p>2 Superb resolution: 1000 Lines (RGB) (typical),<br/>650 Lines (Video) (typical)<br/>RGB character reproduction:<br/>equivalent to 2000 characters<br/>(90 x 25)</p> <p>3 Compact size and light weight (35 kg, 77 lbs), for easy<br/>placement/installation.</p> <p>4 Compatibility with various signal input sources:<br/>VTR/VCR           Video Disk<br/>Video Camera      RGB Computer<br/>TV Tuner</p> | <p>5 Improved raster quality:<br/>High voltage regulation characteristic: 0.3 MΩ</p> <p>6 Ceiling/floor installation and front/rear projection easily<br/>selectable.</p> <ul style="list-style-type: none"> <li>• Ceiling mount/front projection</li> <li>• Ceiling mount/rear projection</li> <li>• Floor placement/front projection</li> <li>• Ceiling mount rear projection with mirror</li> <li>• Floor placement rear projection with mirror</li> </ul> <p>7 Wide-range computer compatibility</p> <p>8 Four broadcast system capability<br/>PAL, SECAM, NTSC and M-NTSC 4.43</p> |
|--|---|

## SAFETY PRECAUTIONS

### GENERAL GUIDELINES

1. It is advisable to use an isolation transformer in the AC line supply before servicing this model.
2. When servicing observe the original lead dress, especially in the high voltage circuit. In case of a short circuit, replace every part which has overheated.
3. After servicing observe that all protective devices such as insulation barriers, fish paper, shields, isolation networks and fuses are properly installed.
4. Before turning the receiver on, the resistance between the B+ line and chassis ground should be checked. Connect the  $\ominus$  side of an ohmmeter to the B+ line and the  $\oplus$  side to chassis ground. Each line should have more resistance than specified, as follows:

B+ (B-) Line	Minimum Resistance
206V	10k $\Omega$
116V	3k $\Omega$
27V	300 $\Omega$
17V	200 $\Omega$
12V	100 $\Omega$
10V	3 $\Omega$
* -17V	150 $\Omega$

\* - Side to ground

5. If the set is not intended to be used for a long time, the power cord should be unplugged from the AC line outlet.
6. Potentials, as high as 32.5 kV are present when this set is in operation. Removal of the covers involves the danger of a shock hazard from the set's power supply. Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary when working on high-voltage equipment. Always discharge the anode of the projection tube to the set chassis before handling the tube.
7. After servicing, make the following leakage current checks to prevent a shock hazard.

### LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two plug prongs.
2. Turn on the set.
3. Measure the resistance value with an ohmmeter between the jumpered AC plug and each exposed metallic part such as screwheads, input terminals, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 490 k $\Omega$  and 9M $\Omega$ . When the exposed metal does not have a return path to the chassis, the reading must be infinite.

### LEAKAGE CURRENT HOT CHECK (See Fig. 1)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 2 k $\Omega$ , 10W resistor, in series with an exposed metallic part on the receiver and an earth such as a water pipe.
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 1.4 volts RMS. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the receiver should be repaired and rechecked before it is returned to the customer.

#### HOT-CHECK CIRCUIT

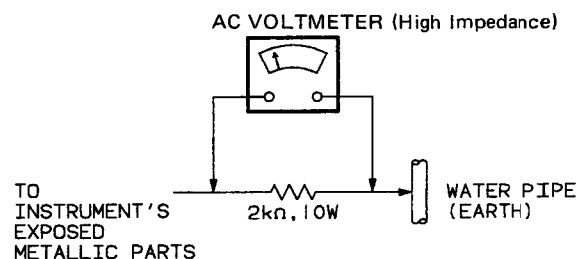


Fig. 1

### X-RADIATION

**WARNING:** The potential source of X-Radiation in the color Projection System is the High Voltage section and the projection tubes.

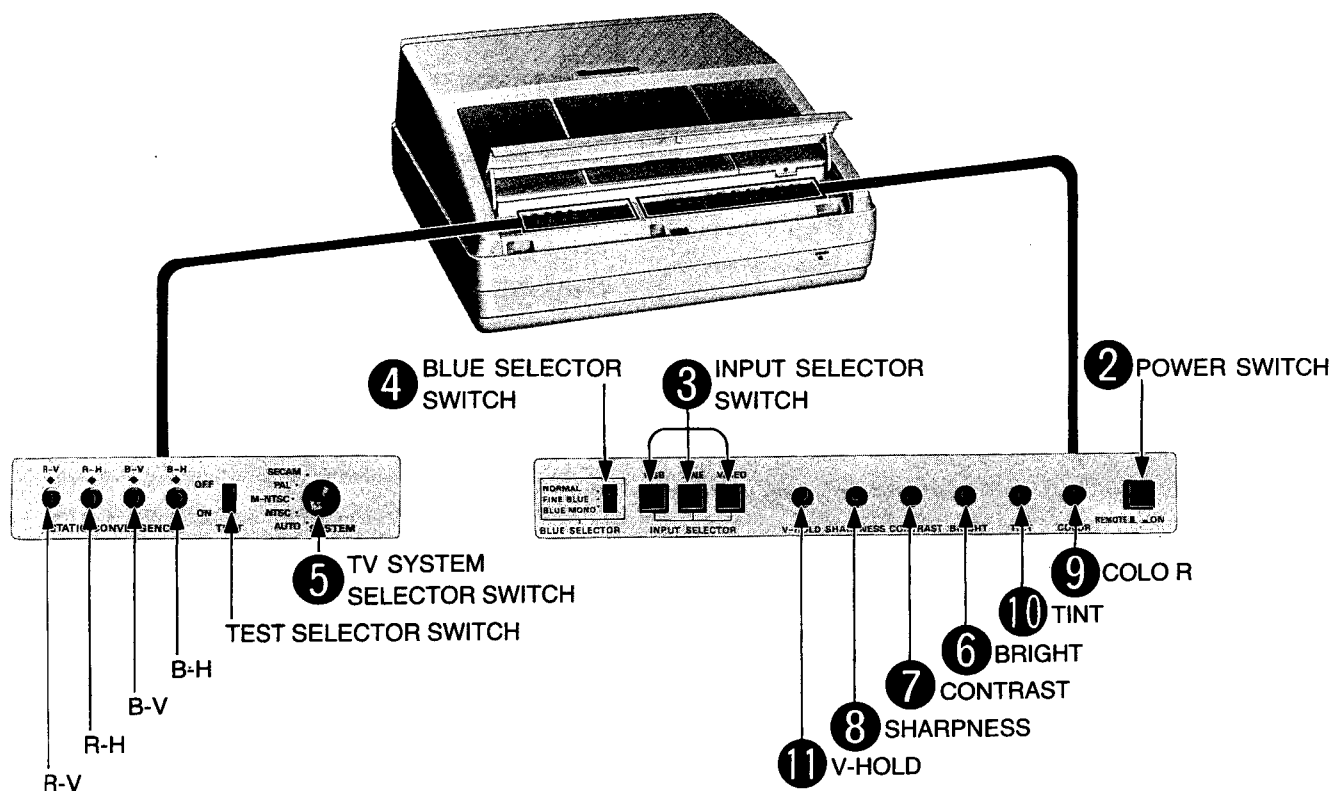
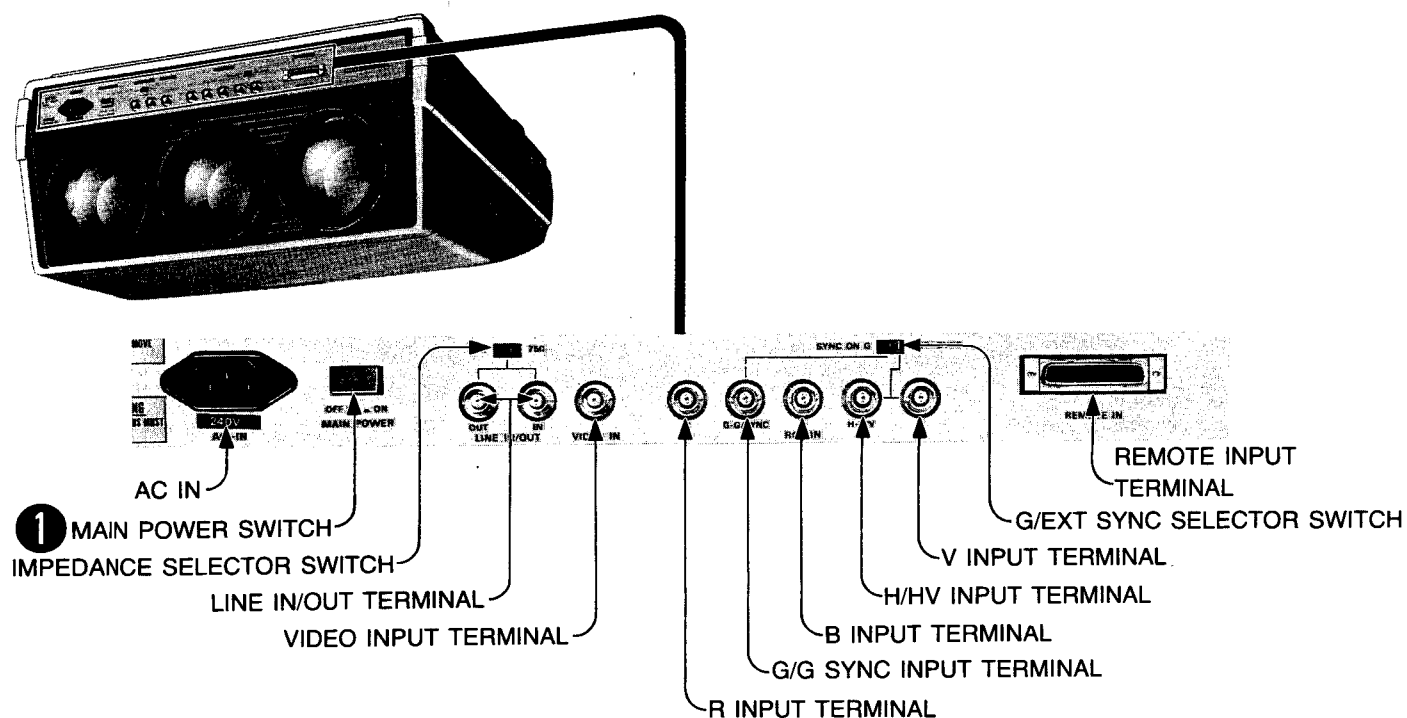
**NOTE:** It is important to use an accurate, periodically, calibrated high voltage meter.

1. Turn the Brightness control fully counterclockwise.
2. Measure the High Voltage. The high voltage meter should indicate 32 kV  $\pm$  0.5 kV. If the upper meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure. (Refer to high voltage adjustment in the manual.)
3. To prevent an X-Radiation possibility, it is essential to use the specified projection tube only.
4. To prevent exposure to X-Radiation, the projection tube shield must be kept in place with power applied to the set.

**WARNING:** When using a projection tube test jig for service, ensure that jig is capable of handling 32.5 kV without causing X-Radiation.

## LOCATION OF CONTROLS, OPERATION AND CONNECTING OPTIONAL EQUIPMENT

### LOCATION OF CONTROLS





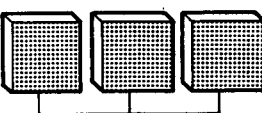
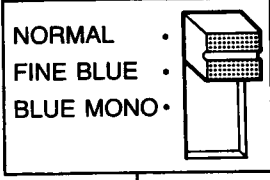



### OPERATION







To operate the projector switches ① and ② must be turned ON, and switch ③ must be set to the proper input signal type.

**Note:** When the separately supplied remote controller (ET-12R) is connected to the video projector, switches ② through ④ and ⑥ through ⑩ are inoperable. Please use the remote controller for these functions.



No.	Switch.	PURPOSE
1	MAIN POWER SWITCH	 OFF  ON MAIN POWER Switches main power supply ON/OFF.
2	POWER SWITCH	 OFF/ REMOTE  ON POWER Power ON/OFF switch. This switch is set to the OFF position, when the remote control is in use.
3	INPUT SELECTOR SWITCHES	 RGB LINE VIDEO INPUT SELECTOR VIDEO...Push this button to view signals input via the VIDEO input terminal. LINE ...Push this button to view signals input via the LINE input terminal. RGB ...Push this button to view signals input via the RGB input terminal.
4	BLUE SELECTOR SWITCH	 NORMAL FINE BLUE BLUE MONO BLUE SELECTOR This switch is operable only when RGB signals are being received. Use this switch when the blue portion of the picture is weak. NORMAL ...Normal blue. FINE BLUE ...A finer, easier-on-the-eye, blue. BLUE MONO...White picture on a blue back ground. Note: When Linear or TTL RGB signals are input at inappropriate levels, the FINE BLUE and BLUE MONO modes might not operate properly.
5	TV SYSTEM SELECTOR SWITCH	 SECAM PAL M-NTSC NTSC AUTO SYSTEM This switch is normally set at AUTO. However, if the picture quality is bad due to the use of dubbed tapes, etc., reception may not be satisfactory. In that case, set the switch to the appropriate input signal using a screwdriver.

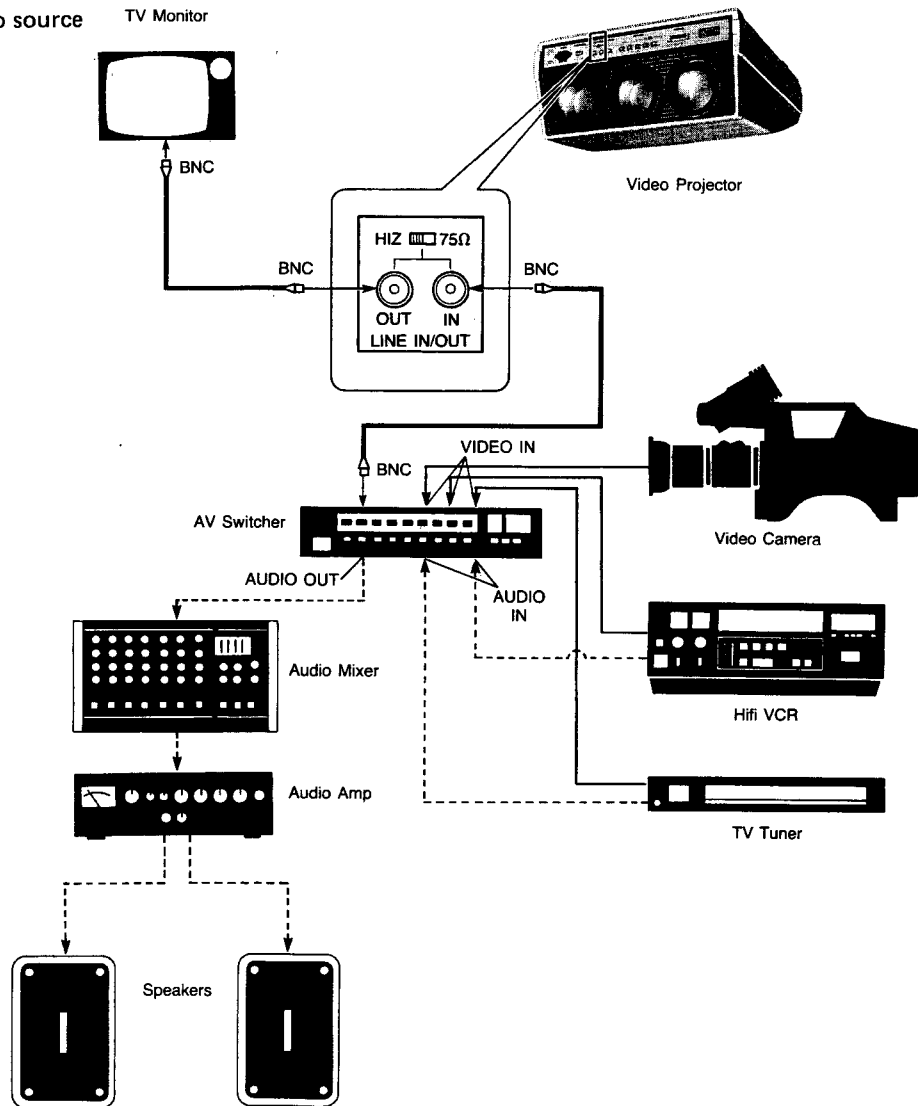
## USE OF CONTROLS

6	BRIGHT	 Decrease Increase The click-stop indicates standard, brightness. Adjust to the appropriate brightness level for current viewing conditions.
7	CONTRAST	 Decrease Increase Adjust to a desirable color intensity.
8	SHARPNESS	 soft sharp To obtain a sharper picture rotate the control clockwise. For a softer picture rotate the control counter-clockwise.
9	COLOR	 Low High Color Color Adjust to a comfortable viewing level, a slightly less intense picture is easier on the eyes.
10	TINT	 red green Adjust for proper skin tone.
11	V-HOLD	 UP DOWN If the picture rolls, as shown, adjust the control UP or DOWN until it stabilises.

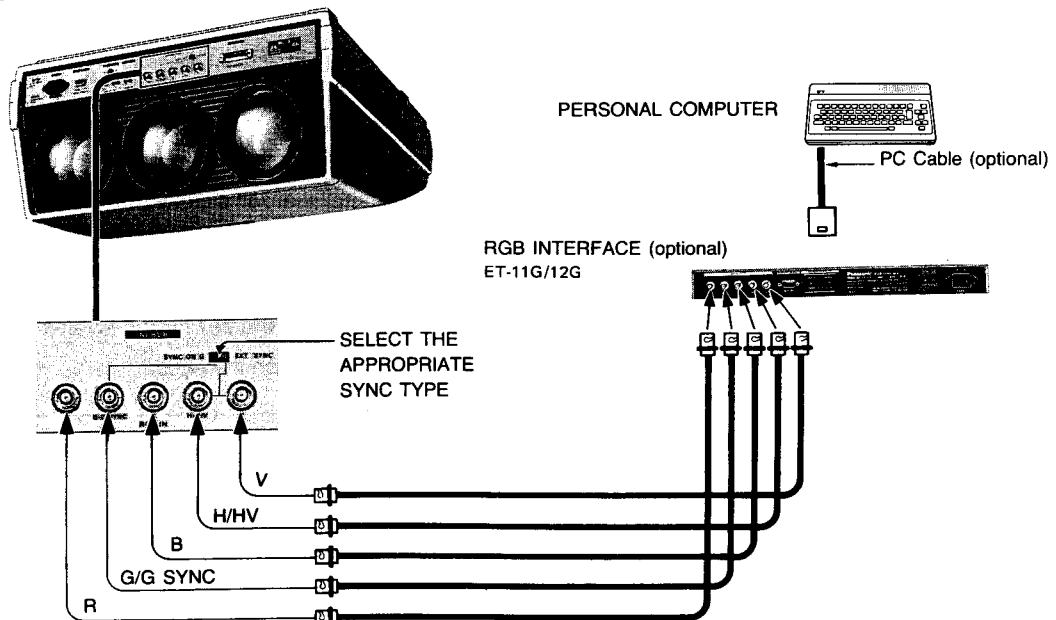
## CONNECTING OPTIONAL EQUIPMENT

Connect optional equipment (example) according to following illustration.

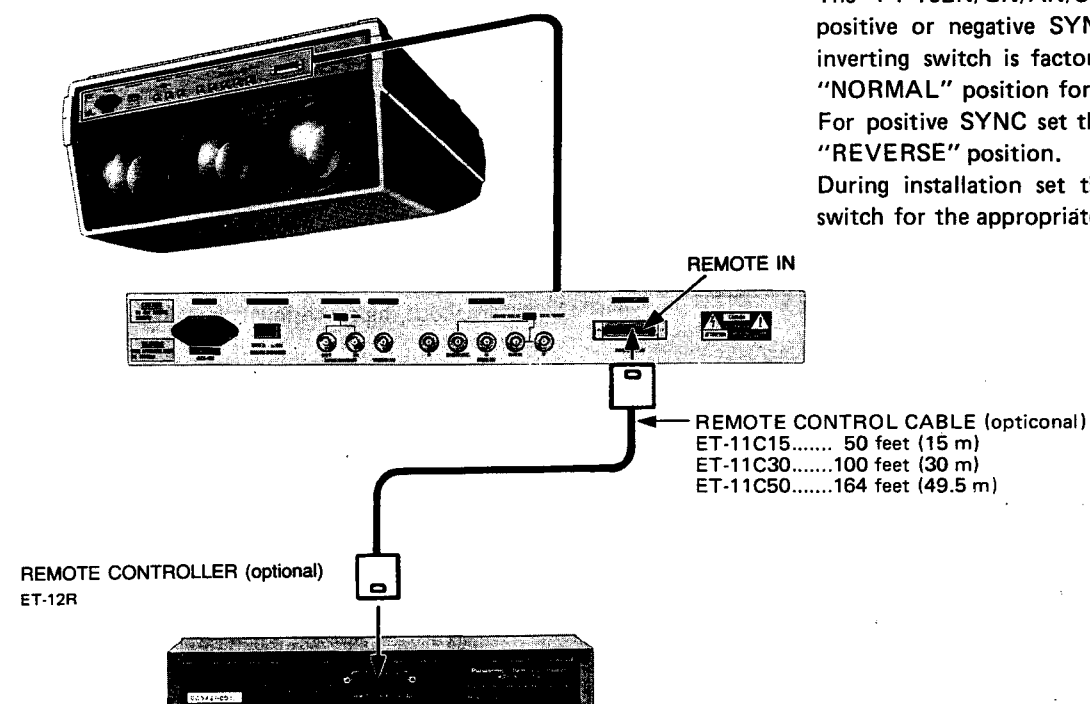
### CASE 1: Connection to a video source



### CASE2: Connection to the RGB interface ET-11G/12G (optional)



CASE 3: Connection to the remote controller ET-12R (optional)

**Note:**

The PT-102N/GN/AN/SN operates on positive or negative SYNC. The SYNC inverting switch is factory preset to the "NORMAL" position for negative SYNC. For positive SYNC set the switch to the "REVERSE" position. During installation set the SYNC invert switch for the appropriate SYNC polarity.

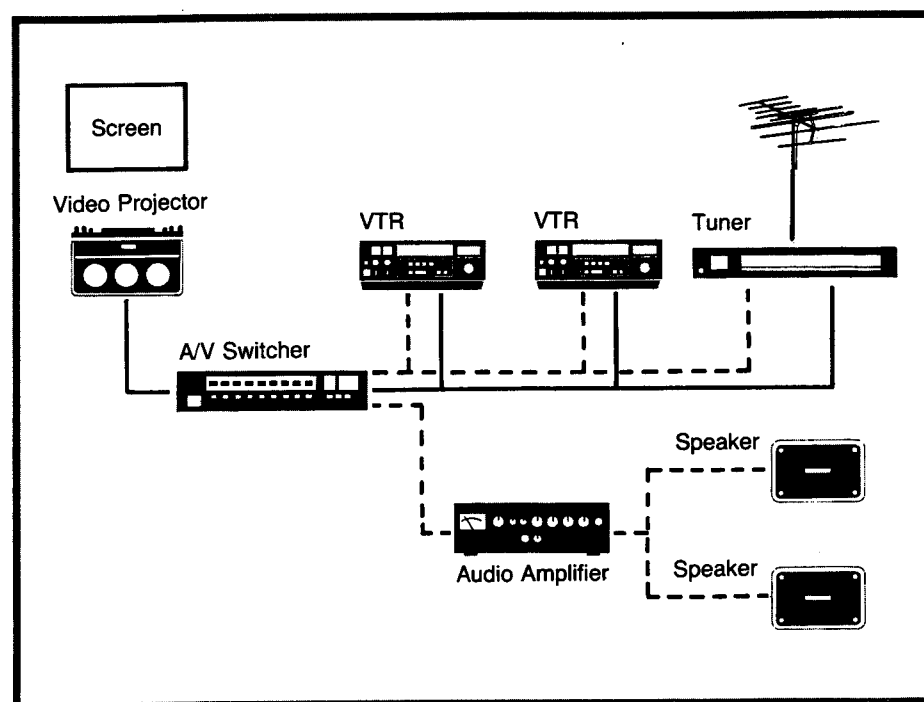
## EXAMPLE 1

### Presentation System

This is the most orthodox VTR playback system. Various variations can be developed on this system according to the required applications.

**Applications:**

- Conference Rooms
- Classrooms
- Public Areas



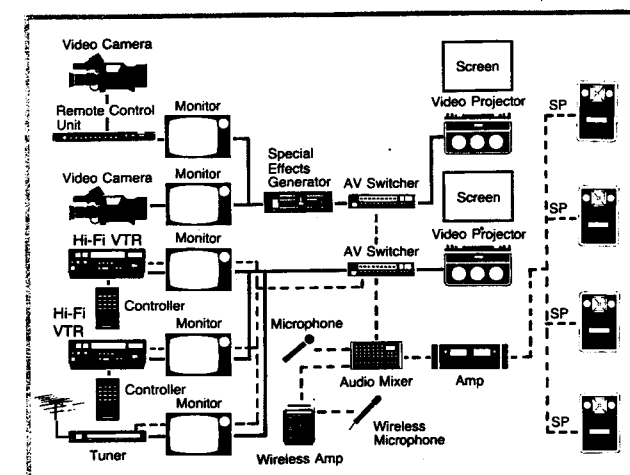
## EXAMPLE 2

### Entertainment System 1

This system is ideal for use for parties, ceremonies, etc. to be held in large places. Great effects are possible with the powerful video images from colour video projectors, when combined with video cameras and audio equipment.

**Applications:**

- Banquet Halls
- Lounges Discos



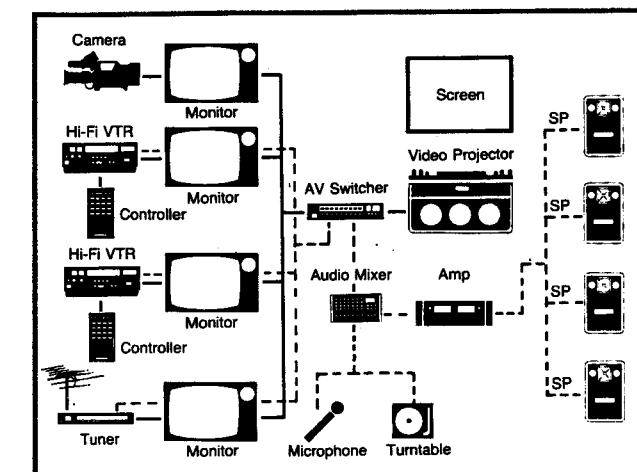
## EXAMPLE 3

### Entertainment System 2

This system is particularly suited to such recreational facilities as bars, restaurant, dance clubs, etc. A wide variety of atmospheric effects can be produced. When used together with stereo sound, a relaxed aura of "background video" and "mood" music, or dynamic video images with music with a beat to match.

**Applications:**

- Lounges Discos
- Restaurants



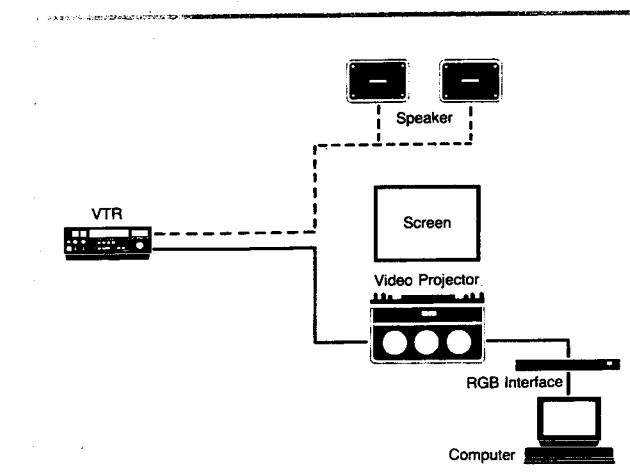
## EXAMPLE 4

### Business Application

This system is designed to concentrate on data presentations for business, conferences, showrooms, etc. Its superb resolution and capacity to match various types of personal computers make it ideal for upgrading office-automation systems and diversified video/data services.

**Applications:**

- Conference Rooms
- Training Areas
- Information Displays



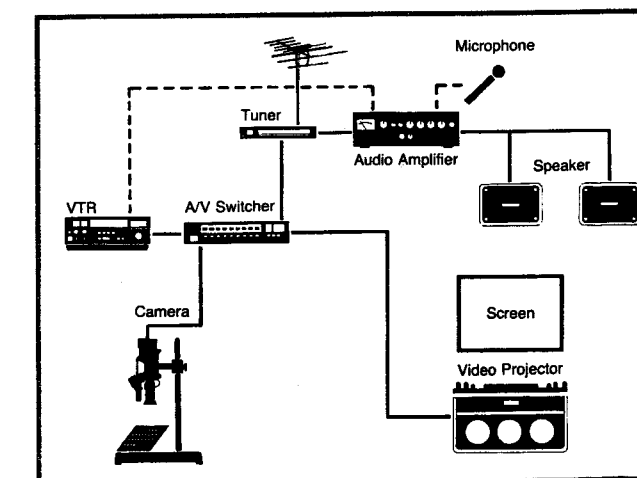
## EXAMPLE 5

### Educational System

Ideal for a wide range of educational activities, particularly as an effective teaching aid.

**Applications:**

- Classrooms
- Auditoriums
- Lecture Halls



## DISASSEMBLY INSTRUCTIONS

### 1. HOW TO REMOVE THE TOP COVER

- 1) Open the cover of control panel.
- 2) Remove 3 screws (A) in fig. 2.
- 3) Then pull the Top Cover toward the back side of the deck and carefully lift it for removal.

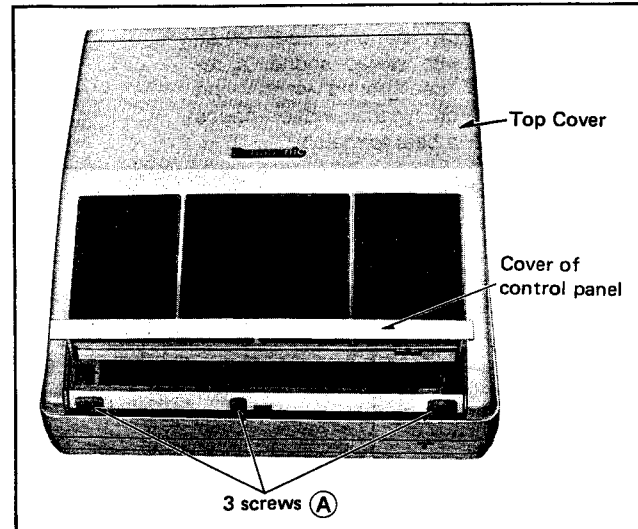


Fig. 2

### 2. HOW TO REMOVE THE LENS GRIL

- 1) Remove 4 screws (B) in fig. 3.
- 2) Remove the Lens Gril.

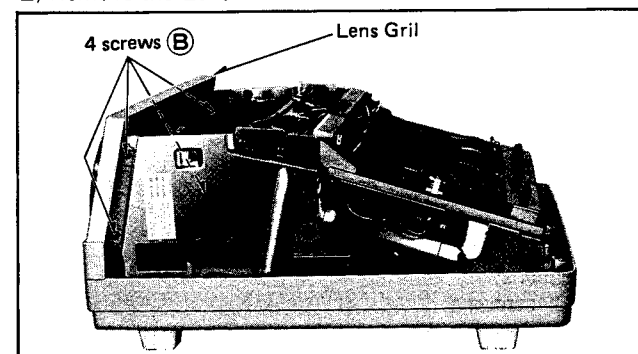


Fig. 3

### 3. HOW TO REMOVE THE CONVERGENCE CONTROL COVER

- 1) Open the cover of control panel.
- 2) Remove a 1 screw (C) in fig. 4.
- 3) Then pull the Convergence Control Cover toward the control panel side for removal.

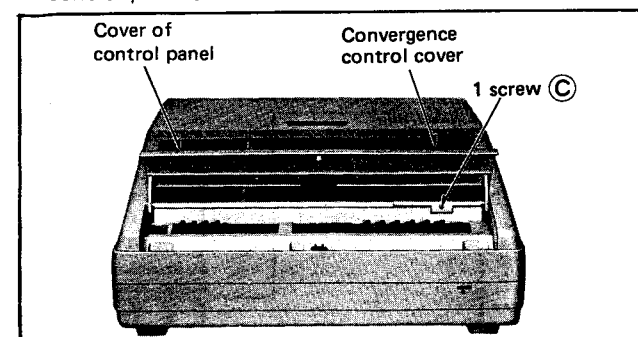


Fig. 4

### 4. HOW TO OPEN THE PRINTED CIRCUIT BOARD

#### 1) C and D, V-Boards

- Loosen 2 screws (D) to counterclockwise by 90° in fig. 5.
- Then lift the rear of the chassis to open the "C", "D", V-Board.

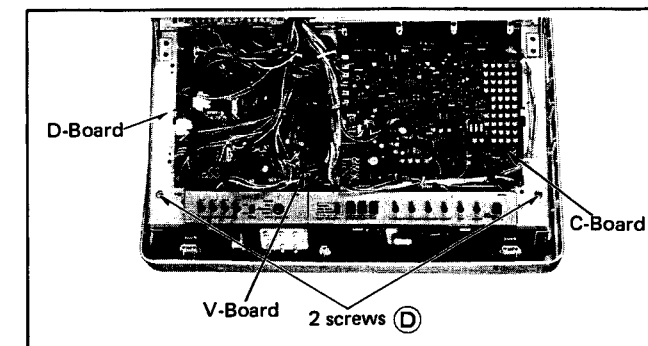


Fig. 5

#### 2) "A" - "B"-Boards

- Remove a 1 screw (E) in fig. 6, and remove the P.C-Board fixing metal.
- Then carefully pull and lift the "A" and "B" Boards for removal.

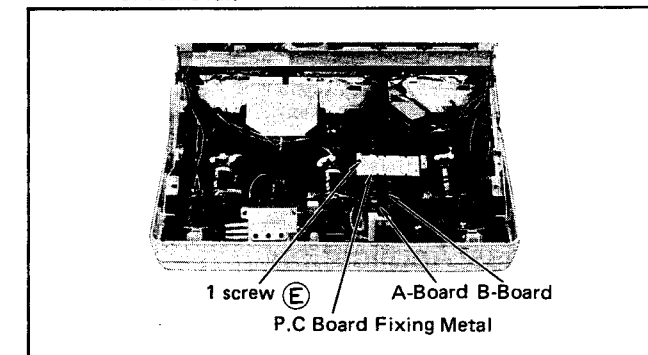


Fig. 6

#### 3) "F"-Board

- Remove a 1 screw (F) in fig. 7, then open the "F"-Board.

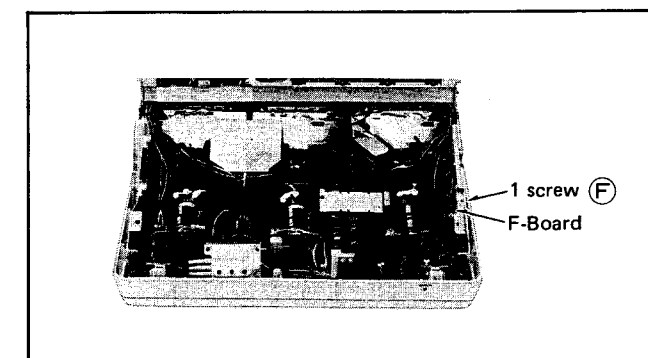


Fig. 7

#### 4) "M"-Board

- Remove 3 screws (G) in fig. 8.
- Then pull the "M"-Board toward the back side of the deck, and carefully lift it to open the "M"-Board.

#### 5) "G"-Board

- Remove 2 screws (H) in fig. 8.
- Then pull the "G"-Board toward the back side of the deck, and carefully lift it to open the "G"-Board.

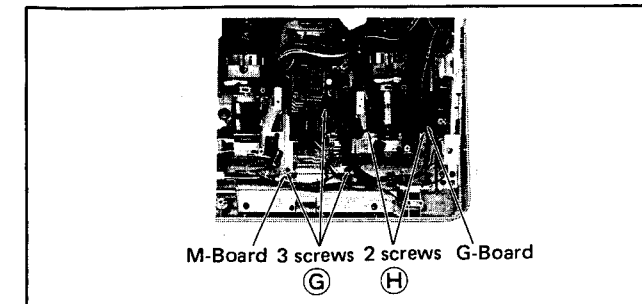


Fig. 8

#### 6) "K"-Board

- Remove the Front Panel.
- Then carefully pull and lift the Terminal Panel for removal in fig. 9.
- Remove 2 screws (I) in fig. 10.
- Then lift and pull out the "K"-Board.

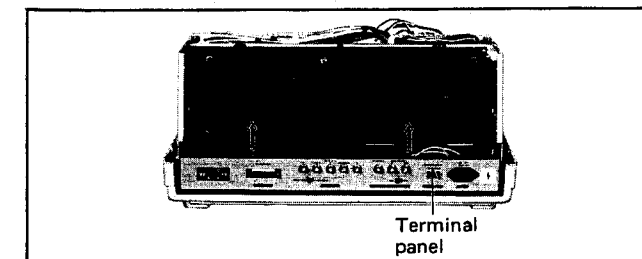


Fig. 9

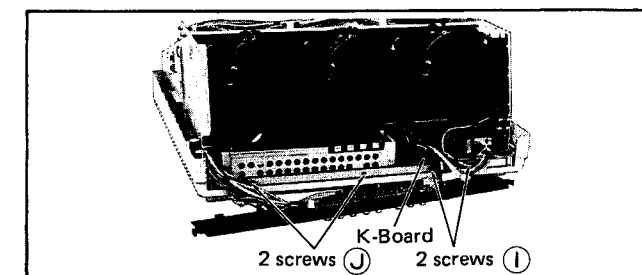


Fig. 10

#### 7) "P" and "Q"-Boards

- Remove the Front Panel and Terminal Panel.
- Remove 2 screws (J) in fig. 10.
- Remove 4 screws (K) in fig. 11, and lift the box cover.
- Then open the "P" and "Q"-Boards.

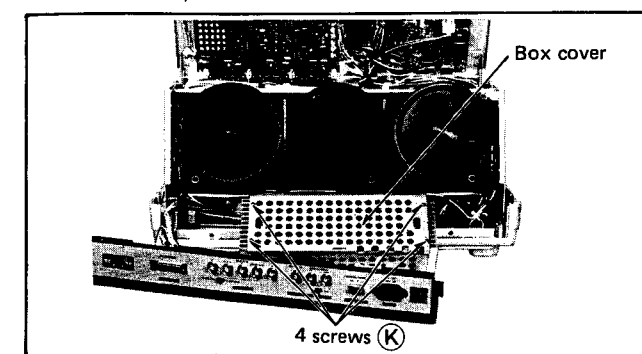


Fig. 11

### 5. HOW TO REMOVE THE PROJECTOR TUBE (WHEN RED)

- 1) Remove the two retaining 2 screws (L) from the tube shown in fig. 12.
- 2) Remove the lens grill shown in fig. 3. (Remove 4 screws (B)).
- 3) Remove the anode lead (M) from the high voltage distributor shown in fig. 13.
- 4) Remove the LR printed circuit board (N) in fig. 13.
- 5) Remove the retaining screw of the neck shield (O) and remove the neck shield (P) in fig. 13.
- 6) Remove the retaining screw of the deflecting coil (Q) and draw out the centering magnet (R) and the deflecting coil (S) in fig. 13.
- 7) Remove the grounding lead from the tube.
- 8) Remove the 4 retaining screws (T) from the tube and draw it out shown in fig. 14.

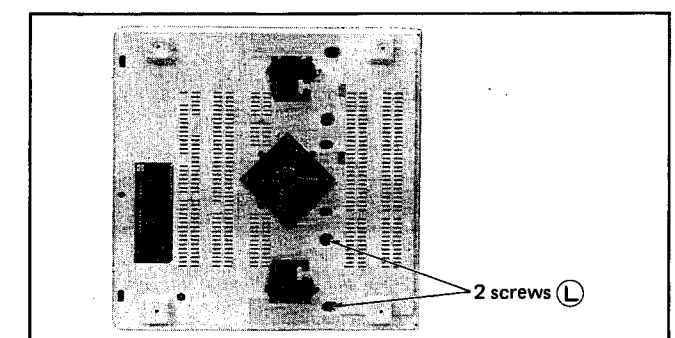


Fig. 12

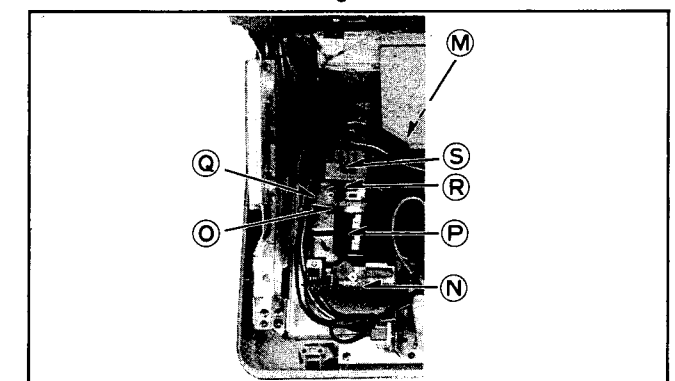


Fig. 13

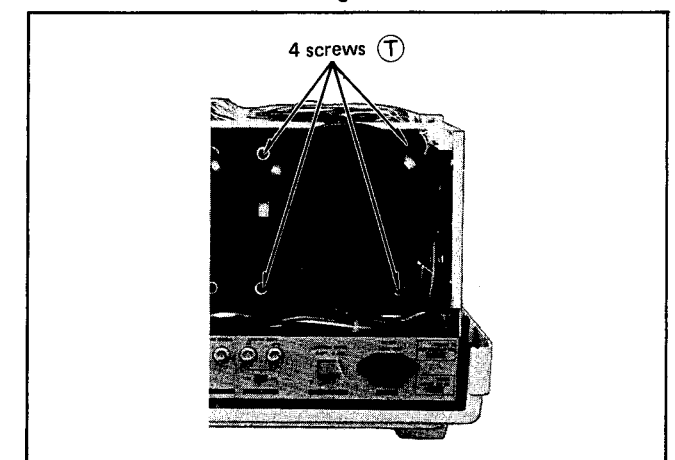


Fig. 14

# MAIN PARTS LOCATION CHART

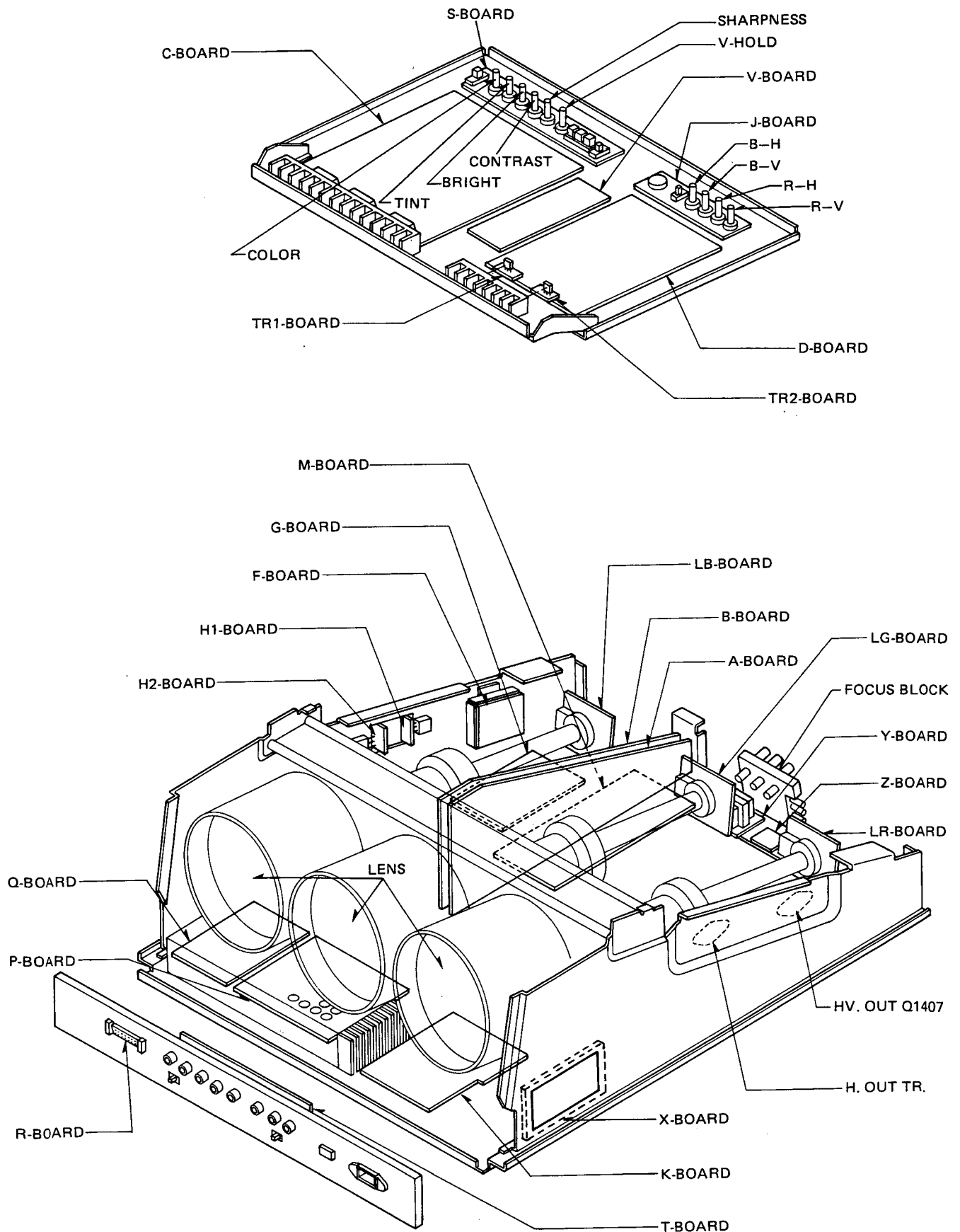


Fig. 15

## CAUTIONS FOR SERVICING

### HORIZONTAL OSC. DISABLE CIRCUIT TEST

This test must be made as a final check before the set is returned to the customer.

1. With the chassis case removed, supply a nominal 120V AC to the set, and turn the set on.
2. Set the customer controls to normal operating positions.
3. Locate Q1404 and short it's collector to the emitter with a jumper wire. Confirm that this shorts the high voltage and that the raster disappears.
4. If this does not occur, the Horizontal Osc. Disable Circuit is not operating. Follow the Horizontal Oscillator Disable Circuit Repair Procedures before the set is returned to the customer.

**NOTE:** The power on/off switch must be turned off and then on to restore operation.

### REPAIR PROCEDURES OF THE HORIZONTAL OSCILLATOR DISABLE CIRCUIT

1. Connect a DC voltmeter between capacitor C1413 + on the D-PCB and chassis ground. If approximately 150V is not present at that point find the cause. Check R535, R591, R1430, R534, C1413 and D1408.
2. Connect a DC voltmeter between capacitor C518 + on the C-PCB and chassis ground. C518 + potential varies from nearly 0V approx to nearly 4V approx when shorting Q1404 (C-E). If this does not occur, find the cause. Check R530, R531, R537, R538, R539, R540, R541, R542, R543, R544, C513, C518, C519, C520, D507, Q510, Q511 and Q512.
3. Carefully check the above specified parts and related circuits and parts. When the circuit is repaired, try the Horizontal Oscillator Disable Circuit Test again.
4. In case that at least one of R535, R591, R534, D507, and the FBT is replaced follow the Adjustment Procedure for the Horizontal Oscillator Disable Circuit as follows.

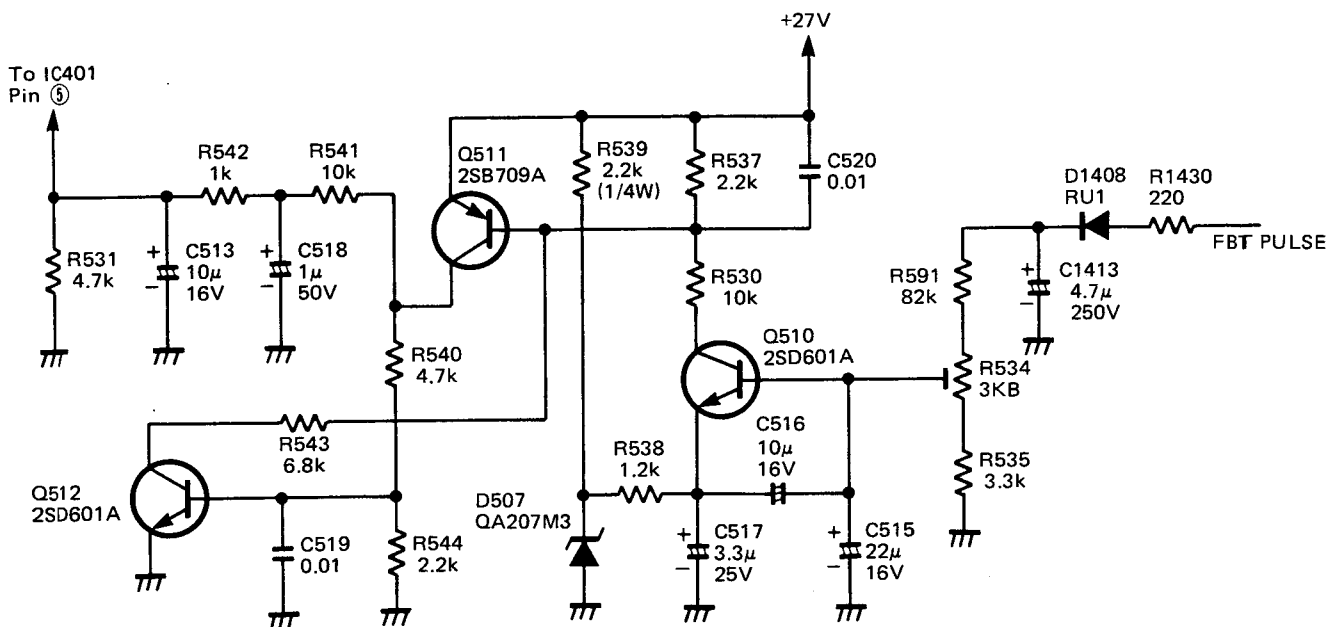
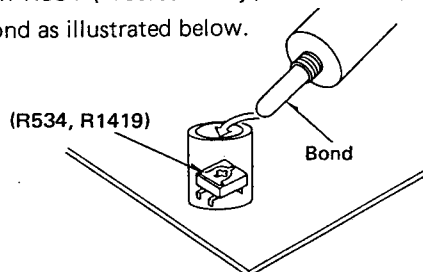


Fig. 16

## ADJUSTMENT PROCEDURE OF THE HORIZONTAL OSCILLATOR DISABLE CIRCUIT

Replace R534 (Protector Adj.) and R1419 (HV Adj.) before this adjustment. But R534 (Protector Adj.) and R1419 (HV Adj.) are only manufactures specified parts.

- Set the following controls at the position indicated.  
Input Selector SW. (S3003) . . . . . LINE  
TV-System Selector SW. (S8002) . . . . . AUTO  
Impedance Selector (75/HIZ) SW. (S1) . . . . . HIZ  
R1419 (HV Adj.) . . . . . Fully clockwise  
R534 (Protector Adj.) . . . . . Fully Counter-clockwise  
Connect the  $\oplus$  (positive) side of DC voltage meter to **TPD1** and  $\ominus$  (negative) side to **TPD2** on D-PCB.
  - Turn on the Power Switch, and receive a monoscope pattern signal.
  - Connect a short jumper between **TPM1** and **TPM2**.
  - Tell where to connect the voltage meter and high voltage prove.
  - Adjust R1419 (HV Adj.) the Brightness control and the Contrast control to obtain  $(33.5 \text{ kV} \pm 0.3 \text{ kV})$  on the high-voltage meter, and obtain  $(1.8\text{V} \pm 0.05\text{V})$  on the voltage meter.
- CAUTION:**  
Use only a Static Type of High Voltage Meter which has a 5% tolerance at 40 kV.
- Adjust R534 (Protector Adj.) slowly clockwise until shut-down occurs and hold that position.
  - Turn off the power switch.
  - Adjust R1419 (HV Adj.) slightly clockwise.
  - Turn on the power switch.
  - Adjust R1419 (HV Adj.) slowly counter-clockwise until shut-down occurs High voltage should be  $33.5 \text{ kV} \pm 0.5 \text{ kV}$ , and  $1.8\text{V} \pm 0.05\text{V}$  on the voltage meter just before shut-down.
  - If the readings in step 10 are not confirmed, repeat steps 5, 6 and 7 again.
  - Turn off the power switch.
  - Disconnect the short jumper between **TPM1** and **TPM2**.
  - Set the 75/HIZ selector SW. (S1) to 75 $\Omega$ .
  - Turn on the power switch, and confirm that the high voltage is  $32.0 \text{ kV} \pm 0.5 \text{ kV}$ .
  - Confirm that the high voltage does not change by turning of the Brightness and Contrast controls.
  - Fix R534 (Protector Adj.) and R1419 (H.V Adj.) with bond as illustrated below.



## DISCONNECTION OF ANODE LEAD FROM THE DISTRIBUTER

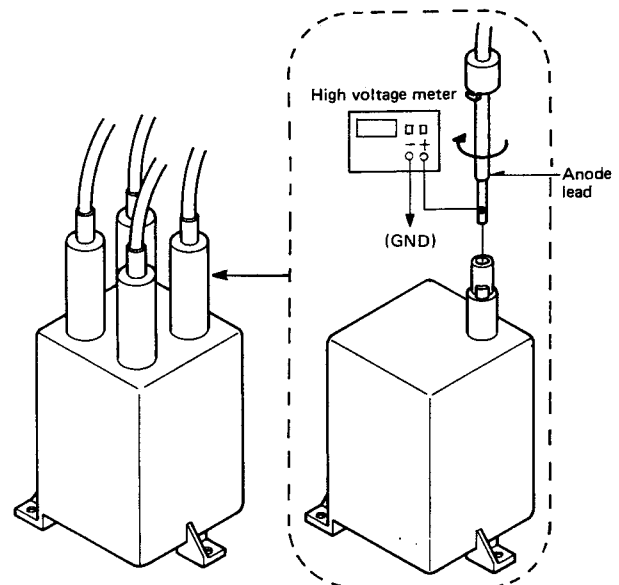


Fig. 17

## X-RAY PRECAUTIONS

The front area (between the projection tube and the lens.) is enclosed by a metal box to ensure positive safety during abnormal and normal conditions when checking and doing repair work. To fully ensure safety, however, the following precautions must be observed.

- Do not remove the lens.
- Be sure to turn OFF the power when the lens must be removed and when you could be exposed to X-rays during cleaning and other routine servicing.
- Do not remove the lens to check the projection tube for operation by watching it directly.
- Do not remove the LEAD TAPE on the CRTs.
- Do not remove the METAL COVER on the CRTs.

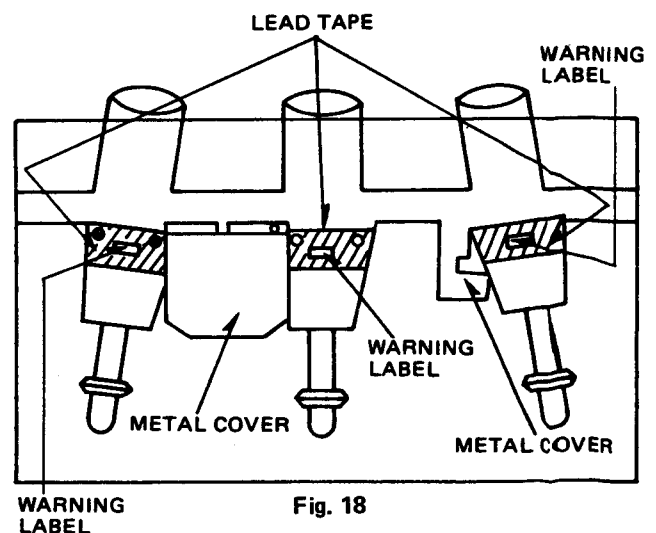


Fig. 18

## FIELD ADJUSTMENTS

**Note:** 1. When a screwdriver is needed during adjustment, use a non-metallic screwdriver to prevent unexpected short-circuits.

2. Transformer core position. (Application for both Field Adjustment and General Alignment.) Unless otherwise noted, a transformer core which has two tuning peak points should be adjusted at the lower position as shown in Fig. 19.

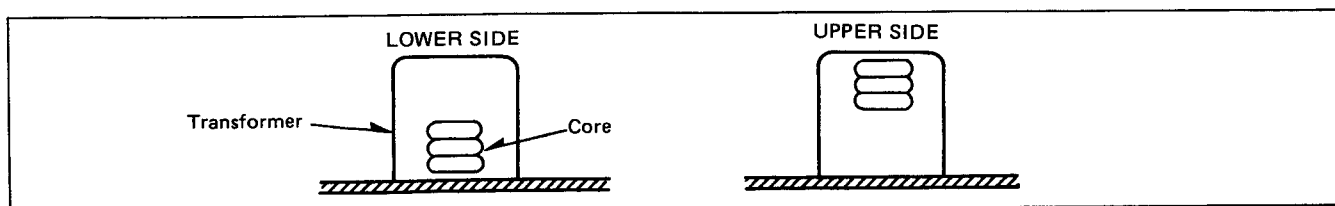


Fig. 19

### 1. DC VOLTAGE CONFIRMATION

- Set the following controls at the positions indicated.  
Brightness control VR (R3009) . . . . . Minimum  
Contrast control VR (R3011) . . . . . Minimum
- Connect a DC voltmeter between each Test Point and **TPC2** (earth).
- Check below for the indicated test points and their specified voltages. (See Table 1)

Test Points	Voltage
Pin ③ of connector D14	115.5V $\pm$ 1.3V
Pin ⑥ of connector C4	115.5V $\pm$ 1.3V
Pin ⑤ of connector C4	26V $\pm$ 1.0V
Pin ② of connector C4	17V $\pm$ 1.0V
Pin ③ of connector C4	-17V $\pm$ 1.0V
<b>TPM1</b>	12V $\pm$ 0.5V

Table 1

### 2. HORIZONTAL CIRCUIT ADJUSTMENT

- Set the following controls at the positions indicated.  
Input Signal Selector SW. (S3003) . . . . . VIDEO  
TV-System Selector SW. (S8002) . . . . . AUTO  
G/EXT Sync Selector SW. (S2) . . . . . Ext. Sync  
NTSC H. Hold control VR (R520) . . . . . Centre  
PAL/SECAM H. Hold control VR (R519) . . . . . Centre  
RGB Horizontal Hold VR (R523) . . . . . Centre  
Brightness control VR (R3009) . . . . . Centre  
Contrast control VR (R3011) . . . . . Centre

1. Connect a Resistor Jumper (10k $\Omega$ ) between **TPB5** and **TPB11**.
2. Connect a Jumper between **TPB10** and earth.

#### 2) VIDEO MODE NTSC

- Receive a monoscope pattern signal (NTSC).
- Connect a capacitor (1 $\mu$ F/50V) between **TP31** and earth.
- Adjust the NTSC H. Hold control VR (R520) to stabilize the picture.

#### 3) VIDEO MODE (PAL/SECAM)

- Receive a Phillips pattern signal (PAL).
- Connect a capacitor (1 $\mu$ F/50V) between **TP31** and earth.
- Adjust the PAL/SECAM H. Hold control VR (R519) to stabilize the picture.

#### 4) RGB MODE

- Set the Input Signal Selector SW. (S3003) to the RGB position.
- Receive an RGB signal from an RGB signal generator. (The horizontal frequency of the RGB signal should be in 15.750 kHz  $\pm$  0.25 kHz range.).
- Connect a capacitor (1 $\mu$ F/50V) between **TP31** and earth.
- Adjust the RGB H. Hold control VR (R523) to stabilize the picture.

### 3. SUB CONTRAST ADJUSTMENT (1)

- Set the following controls at the position indicated.  
Colour control VR (R3002) . . . . . Minimum  
Sub Contrast control VR (R353) . . . . . Centre
- Receive a colour bar signal.
- Connect an oscilloscope between **TPA14** and earth.
- Adjust Sub Contrast control VR (R353) to achieve 0.7V  $\pm$  0.05V on the oscilloscope as shown in Fig. 20.



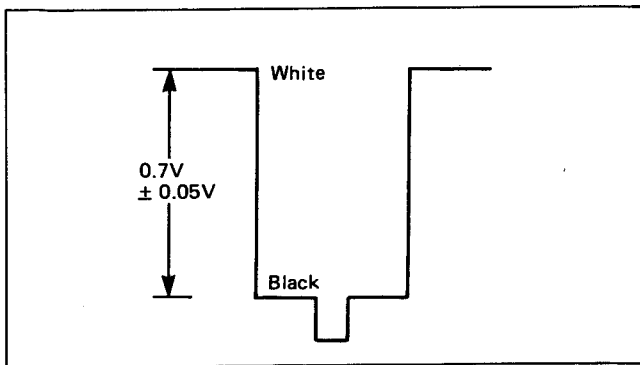


Fig. 20

#### 4. SUB CONTRAST ADJUSTMENT (2)

- 1) Set the following controls at the positions indicated.  
 Brightness control VR (R3009) . . . . . Minimum  
 Colour control VR (R3002) . . . . . Minimum  
 Contrast control VR (R3011) . . . . . Maximum  
 Sub Contrast control VR (R1103) . . . . . Centre
- 2) Receive an NTSC colour bar signal.
- 3) Remove the D11 connector. (D-PCB).
- 4) Connect an oscilloscope between **TPB7** and earth.
- 5) Adjust Sub Contrast control VR (R1103) to achieve  $2.5V \pm 0.2V$  on the oscilloscope as shown in Fig. 21.
- 6) Set Power switch to OFF position and insert the D11 connector.

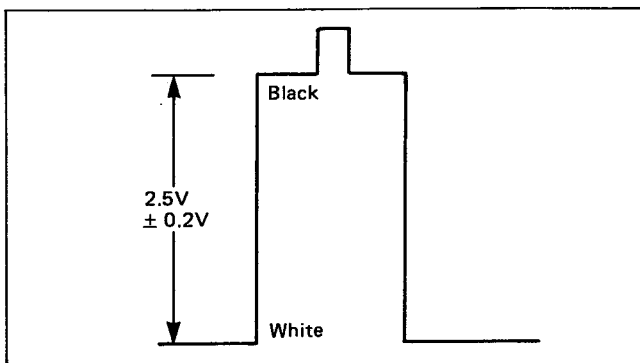


Fig. 21

#### 5. VERTICAL LINEARITY ADJUSTMENT

- 1) Set the following controls and switches at the positions indicated.  
 Input signal Selector SW. (S3003) . . . . . VIDEO  
 TV-System Selector SW. (S8002) . . . . . AUTO  
 Brightness control VR (R3009) . . . . . Click Stop  
 Contrast control VR (R3011) . . . . . Maximum  
 Vertical Linearity control VR (R442) . . . . . Centre
- 2) Receive an PAL Phillips pattern signal.
- 3) Adjust the Vertical Linearity control VR (R442) until the circle of the pattern is symmetrical from top to bottom (real circle).

#### 6. VERTICAL HEIGHT ADJUSTMENT

**Note:** At the 120 inch size.

- 1) Set the following controls and switches at the positions indicated.  
 Input Signal Selector SW. (S3003) . . . . . LINE  
 TV-System Selector SW. (S8002) . . . . . AUTO  
 G/EXT Sync Selector SW. (S2) . . . . . Ext. Sync.  
 Video V-Size control VR (R428) . . . . . Centre  
 NTSC Sub V-Size control VR (R432) . . . . . Centre  
 RGB V-Size control VR (R437) . . . . . Centre  
 Brightness control VR (R3009) . . . . . Click Stop  
 Contrast control VR (R3011) . . . . . Maximum
- 2) **VIDEO MODE**
  1. Receive a PAL Phillips pattern signal.
  2. Adjust the Video V-Size control VR (R428) to achieve a pattern height of 1957 mm.
  3. Set the Input Signal Selector SW. (S3003) to VIDEO and receive an NTSC monoscope pattern signal.
  4. Adjust the NTSC Sub V-Size control VR (R432) to achieve a pattern height of 1957 mm.

#### 3) RGB MODE

1. Set the Input Signal Selector SW. (S3003) to RGB.
2. Receive an RGB signal from an RGB signal generator.
3. Adjust the RGB V-Size control VR (R437) to achieve a pattern height of 1957 mm.

#### 7. HORIZONTAL WIDTH ADJUSTMENT

- 1) Set the following controls and switches at the positions indicated.  
 Input Signal Selector SW. (S3003) . . . . . VIDEO  
 TV-System Selector SW. (S8002) . . . . . AUTO  
 G/EXT Sync Selector SW. (S2) . . . . . Ext. Sync.  
 Video H-Size control VR (R1541) . . . . . Centre  
 RGB H-Size control VR (R1536) . . . . . Centre  
 Brightness control VR (R3009) . . . . . Click Stop  
 Contrast control VR (R3011) . . . . . Maximum
- 2) **VIDEO MODE**
  1. Receive an PAL Phillips pattern signal.
  2. Adjust the Video H-Size control VR (R1541) to achieve a pattern width of 2609 mm.

## 3) RGB MODE

1. Set the Input signal selector SW. (S3003) to RGB.
2. Receive an RGB signal from an RGB signal generator.
3. Adjust the RGB H-Size control VR (R1536) to achieve a pattern width of 2609 mm.

## 8. RASTER GEOMETRIC ADJUSTMENT

- 1) Set the following controls and switches at the positions indicated.

Input Signal Selector SW. (S3003) . . . . . VIDEO  
 Brightness control VR (R3009) . . . . . Click Stop  
 Contrast control VR (R3011) . . . . . Maximum  
 Red, Blue Static convergence controls  
 VR (R8001 ~ R8004) . . . . . Centre  
 Green Static convergence controls  
 VR (R7005 ~ R7006) . . . . . Centre  
 Red, Blue Dynamic convergence controls VR (R871,  
 R873, 876, 878, 880, 882, 884, 885, 887, 890, 892,  
 R894, 896, 898, 900, 901, 904, 905, 909, 911, 913,  
 R915, 917, 919, 921, 923, 924, 926, 928, 930, 932,  
 R935, 937, 939, 941, 943, 7012, 7013). . . . . Centre  
 Red, Blue Top and Bottom Pincushion  
 compensation VRs (R870, R907). . . . . Centre  
 Green Top and Bottom Pincushion  
 Compensation VR (R788). . . . . Centre  
 T/B incushion Waveform Adjustment  
 VRs (R955, R958, R7036) . . . . . Centre  
 TV-System Selector SW. (S8002) . . . . . AUTO

- 2) Receive an NTSC cross hatch pattern signal.
- 3) Connect an oscilloscope between **TPC5** and earth.
- 4) Adjust R955, R958 and R7036 to achieve maximum amplitude and confirm that both side of the bow tie pattern are symmetrical (A, B in Fig. 22).

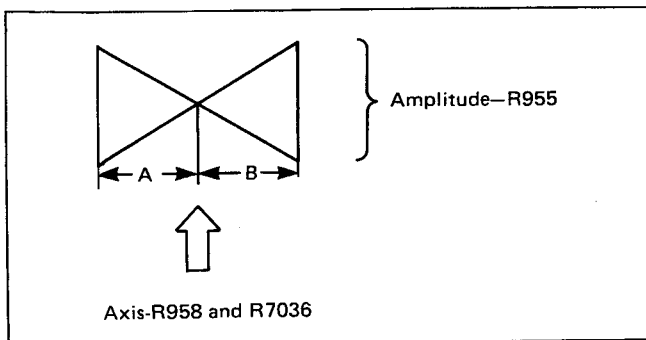


Fig. 22

- 5) Disconnect oscilloscope from **TPC5**.
- 6) Connect an oscilloscope between **TPC1** and **TPC2** (earth).
- 7) Adjust R787 and R791 to achieve the correct waveform as shown in Fig. 23.
  - a. Both sides of bow tie wave should be symmetrical.
  - b. Peak points should be at the same level.

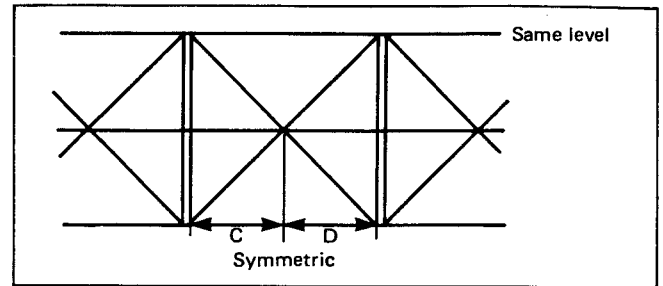


Fig. 23

- 8) Cover the Red and Blue lenses with lens covers.
- 9) Adjust Green Top and Bottom Pincushion Compensation VR (R788) to obtain straight horizontal Green lines from top to bottom.
- 10) If adjusting R788 is insufficient, adjust R7036, R958 and R788 accordingly by the following procedures.  
 (Refer to Fig. 24-A, 24-B).

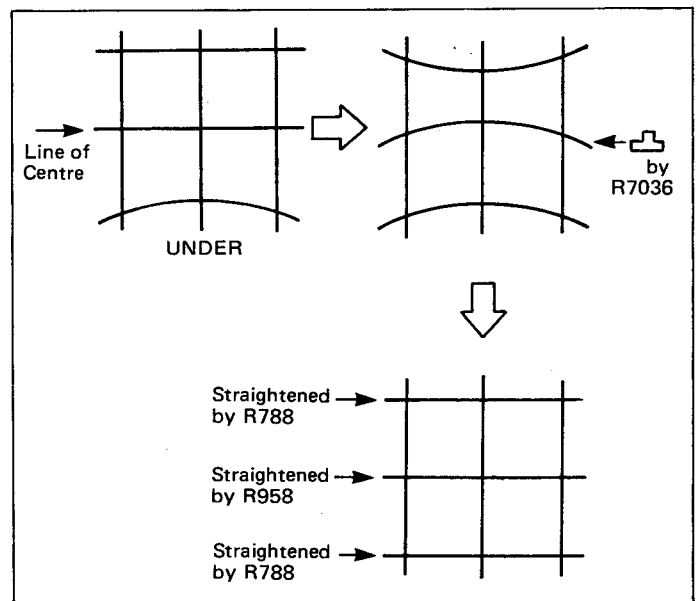


Fig. 24-A

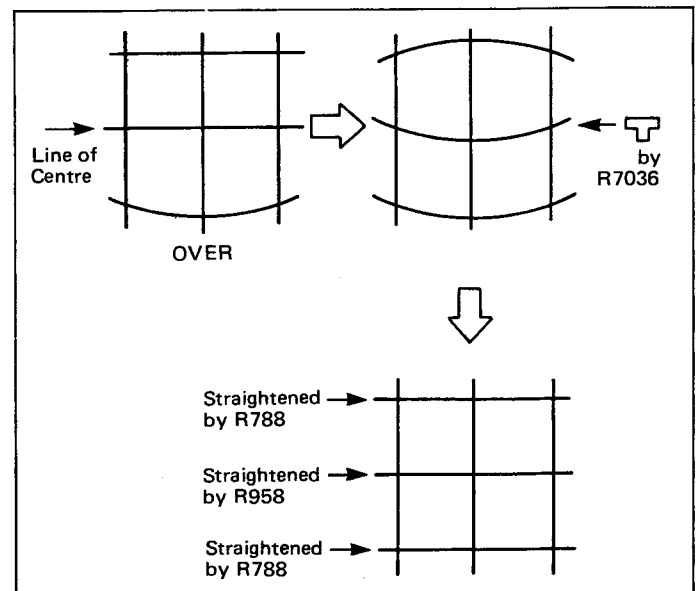


Fig. 24-B

- 11) Adjust R745 to get straight horizontal lines from top to bottom as shown in Fig. 25.

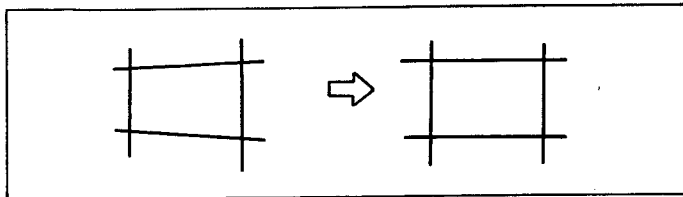


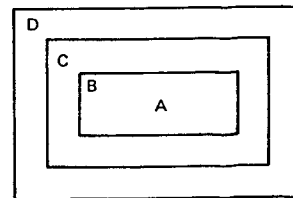
Fig. 25.

## 9. CONVERGENCE ADJUSTMENT

- 1) Demagnetize the chassis and CRTs using a degaussing coil.
- 2) Adjust all three deflection yokes to converge all horizontal lines at the centre of the screen. Deflection yokes be inserted all the way towards the front side of the CRT.
- 3) Adjust each centring magnet to set the pattern centre to at the geometric centre of the screen.
- 4) Readjust the deflection yoke if any of the horizontal lines are tilted.
- 5) Receive an RGB signal and turn on the TEST SW. (S8001).
- 6) Cover the Blue lens with the lens cover.
- 7) Adjust the convergence as follows.
- 8) The following controls are located on the convergence control board.
- 9) Adjust each of the red convergence adjustment controls in the order of the instructions ⑤ to ⑳ in the figure so that the red pattern matches the green pattern.
- 10) Remove the lens cover from the Blue lens and cover the Red lens.
- 11) Adjust each of the blue convergence adjustment controls in the order of the instructions ㉔ to ㉙ in the figure so that the blue pattern matches the green pattern.
- 12) Return the red CRT to operation.

Order of Adjustment VR'S					Function of Adjustment VR'S				
G	B-H	B-V	R-H	R-V	G	B-H	B-V	R-H	R-V
MAIN					MAIN				
①	②⑦	②⑥	⑥	⑤					
②	③⑩	③②	⑨	⑪					
③	③①	③③	⑩	⑫					
④	③④	②⑧	⑬	⑦					
	③⑤	②⑨	⑭	⑧					
	SUB1				SUB1				
	④⑩	③⑥	⑱	⑮					
B-H	④⑥	④①	③⑦	⑳					
R-H	②⑤	④②	③⑧	㉑					
	④③	③⑨	㉒	⑱					
	SUB2				SUB2				
G-STATIC	④⑧	④⑦	④⑤	④④					
			㉔	㉕					

**CONVERGENCE LIMITS :**  
(in mm from centre of raster centre)



Inch Zone	50"	70"	100"	120"
A	0.4	0.5	0.7	1
B	3.5	5	7	9
C	6	9	12	15
D	6	9	12	15

[mm]

## 10. GK DRIVE ADJUSTMENT

- Set the following controls at the position indicated.  
 Brightness control VR (R3009) ..... Click 'Stop'  
 Colour control VR (R3002) ..... Minimum  
 Contrast control VR (R3011) ..... Maximum
- Remove the D11 connector (D-PCB).
- Receive an NTSC colour bar signal.
- Connect the oscilloscope between **TPLG1** and earth.
- Adjust Brightness control VR (R3009) to control the black level, less than B+ (205V) level.
- Adjust G-Drive control VR (R1801) to achieve  $130V \pm 3V$  as shown in Fig. 26.

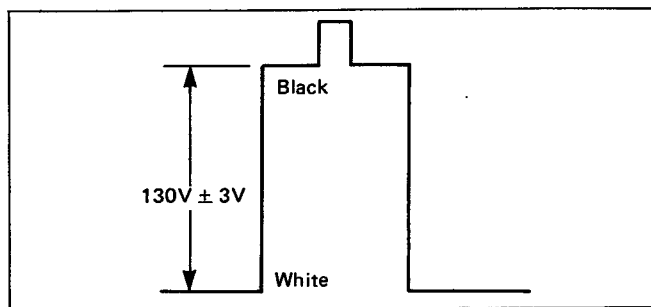


Fig. 26

- Set Power switch to OFF position and insert the D11 connector.

## 11. CUT OFF ADJUSTMENT

- Set the following controls at the positions indicated.  
 Colour control VR (R3002) ..... Minimum  
 Brightness control VR (R3009) ..... Click Stop  
 Screen VR (FOCUS SCREEN VR) ..... Minimum
- Receive an NTSC colour bar signal.
- Set Service switch (S10) to Service position.
- Connect oscilloscope to **TPLG1** and earth.
- Adjust Sub Contrast control VR (R353) such that voltage meter reading is  $182V \pm 2V$  at the horizontal scanning period.

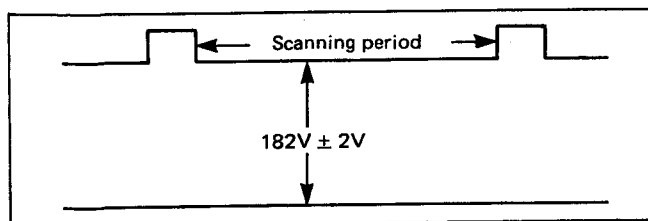


Fig. 27

## 12. WHITE BALANCE ADJUSTMENT

**Note:** Do not adjust Focus screen VR (G) and G drive VR (R1801).

- Receive an white pattern signal.
- Set service switch (S10) to the SERVICE position.

- Set the Focus screen VR (R/B) to the minimum position.
- Adjust Brightness control VR (R3009) so that the picture tube (G) becomes faint light.
- Set service switch (S10) to the NORMAL position and adjust high light, white balance with R drive VR (R1701) and B drive VR (R1901) controls.

## 13. SUB BRIGHTNESS ADJUSTMENT AND ABL CONFIRMATION

- Set the following controls at the positions indicated.  
 Brightness control VR (R3009) ..... Click Stop  
 Contrast control VR (R3011) ..... Minimum  
 Sub Brightness control VR (R1107) ..... Minimum
- Connect a digital voltmeter between **TPD1** (+) and **TPD2** (-).
- Receive a monoscope pattern signal.
- Adjust the Sub Brightness control VR (R1107) to achieve  $500 mV \pm 15 mV$ .
- Set Brightness VR (R3009) and Contrast VR (R3011) controls to maximum then confirm that  $1.5V \pm 0.1V$  is present between **TPD1** and **TPD2**.

## 14. PAL APC ADJUSTMENT

- Set the following controls at the position indicated.  
 Colour control VR (R3002) ..... Maximum  
 R651 (SECAM DL Adj.) ..... Centre
- Receive an PAL colour bar signal and set the Input signal selector SW. (S3003) to the PAL position.
- Connect an oscilloscope between **TPA10** and chassis GND.
- Adjust PAL APC ADJ. (R619) to achieve waveform shown in Fig. 28.

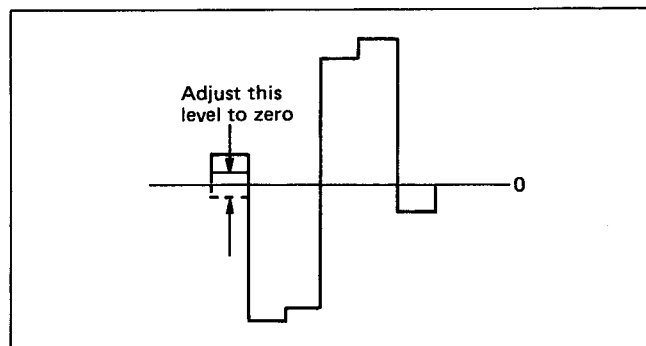


Fig. 28

## 15. PAL DELAY LINE ADJUSTMENT

- Set the following control at the position indicated.  
 Colour control VR (R3002) ..... Maximum
- Receive an PAL colour bar signal and set the Input signal selector SW. (S3003) to the PAL position.
- Connect an oscilloscope between **TPA12** and chassis GND.

- 4) Adjust Delay Line Adj. VR (R633) and Delay Line Matching Trans. (L617) to achieve waveform shown in Fig. 29.

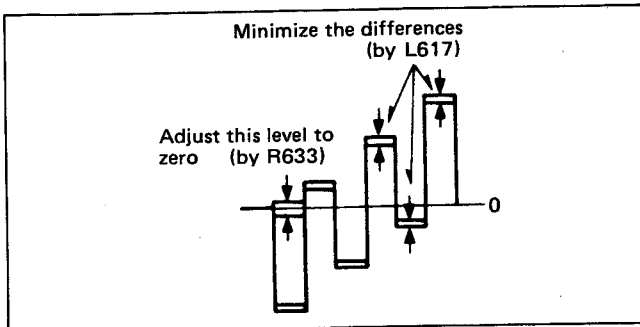


Fig. 29

## 16. PAL COLOUR OUTPUT ADJUSTMENT

- Set the following control at the position indicated.  
Colour control VR (R3002) . . . . . Maximum
- Receive an PAL colour bar signal and set the Input signal selector SW. (S3003) to the PAL position.
- Connect an oscilloscope between **TPA12** and chassis GND. When adjust Sub colour VR (R629) to achieve  $1.8V \pm 0.1V_{p-p}$  on the oscilloscope as shown in Fig. 30
- Connect an oscilloscope between **TPA10** and chassis GND. When confirm that the waveform level is  $2.2V \pm 0.5V_{p-p}$  on the oscilloscope.

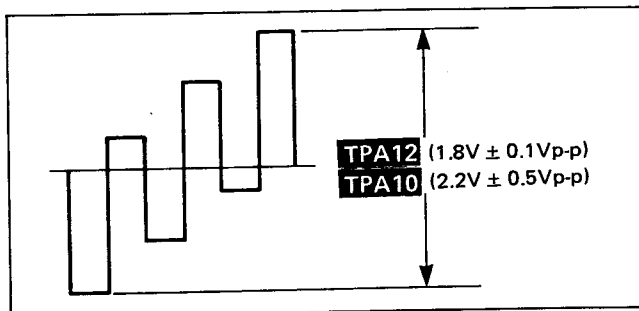


Fig. 30

## 17. NTSC APC ADJUSTMENT

**Note:** Before making this adjustment, PAL APC adjustment must be completed.

- Set the following control at the position indicated.  
Colour control VR (R3002) . . . . . Maximum  
Tint VR (R3006) . . . . . Fully clockwise
- Receive an PAL colour bar signal and set the Input signal selector SW. (S3003) to the PAL position.
- Connect an electronic voltmeter to **TPA6** and memorize indication of the electronic voltmeter.
- Change signal PAL colour bar pattern into NTSC rainbow colour bar pattern and Input signal selector SW. (S3003) to the NTSC position.
- Adjust C613 to obtain the value specified in item 4) within a tolerance  $\pm 0.1V$ .

## 18. 3.58 NTSC COLOUR OUTPUT

- Set the following control at the position indicated.  
Colour control (R3002) . . . . . Maximum
- Receive an NTSC rainbow colour bar signal and set the Input signal selector SW. (S3003) to the NTSC position.
- Connect an oscilloscope between **TPA12** (B-Output) and chassis GND. When confirm that the waveform level is  $0.7V \pm 0.2V_{o-p}$  on the oscilloscope.
- Disconnect oscilloscope from **TPA12** (B-Output) and connect oscilloscope to **TPA10** (R-Output). When confirm that the waveform level is  $0.6V \pm 0.2V_{o-p}$  on the oscilloscope.
- Disconnect oscilloscope from **TPA10** (R-Output) and connect oscilloscope to **TPA12** (B-Output).
- Turn Tint control (R3006) and confirm that the variable range is more than  $60^\circ$ .

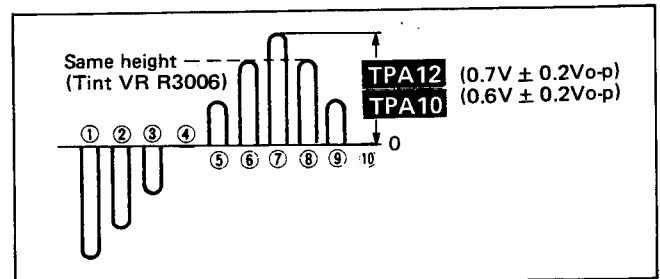


Fig. 31

## 19. M-NTSC COLOUR OUTPUT

**Note:** Before making this adjustment, PAL APC adjustment must be completed.

- Set the following control at the position indicated.  
Colour control (R3002) . . . . . Maximum
- Receive an M-NTSC rainbow colour bar signal and set the Input signal selector SW. (S3003) to the M-NTSC position.
- Connect an oscilloscope between **TPA12** (B-Output) and chassis GND. When confirm that the waveform level is  $0.6V \pm 0.2V_{o-p}$  on the oscilloscope.
- Disconnect oscilloscope from **TPA12** (B-Output) and connect oscilloscope to **TPA10** (R-Output). When confirm that the waveform level is  $0.5V \pm 0.2V_{o-p}$  on the oscilloscope.
- Disconnect oscilloscope from **TPA10** (R-Output) and connect oscilloscope to **TPA12** (B-Output).
- Turn Tint control (R3006) and confirm that the variable range is more than  $60^\circ$ .

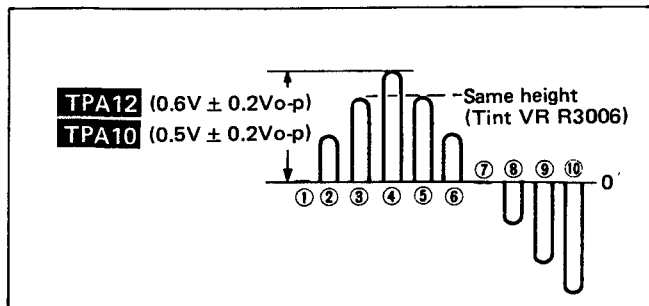


Fig. 32

## 20. SECAM DELAY LINE ADJUSTMENT

- 1) Set the following control at the position indicated.  
Colour control (R3002) ..... Maximum  
Adjust R-Y Gain (R646) and B-Y Gain (R659) controls shown in Fig. 33.

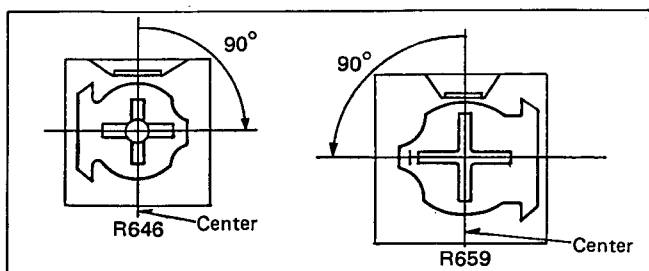


Fig. 33

- 2) Receive an SECAM colour bar signal and set the Input signal selector SW. (S3003) to the SECAM position.
- 3) Connect an oscilloscope between **TPA12** (B-Output) and chassis GND.
- 4) Adjust Delay Line Adj. (R651) and Delay Line Matching Trans. (L619) to achieve waveform shown in Fig. 34.

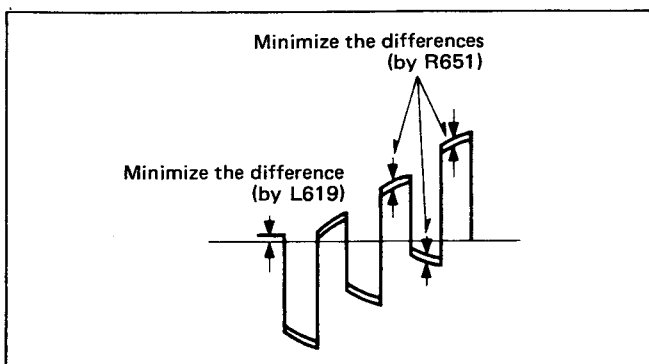


Fig. 34

## 21. BELL FILTER/LINE DISCRIMINATOR

- 1) Set the following control at the position indicated.  
Colour control (R3002) ..... Maximum
- 2) Receive an SECAM colour bar signal and set the Input signal selector SW. (S3003) to the SECAM position.
- 3) Connect an oscilloscope between **TPA12** (B-Output) and chassis GND.
- 4) Adjust L615 to achieve waveform shown in Fig. 35.

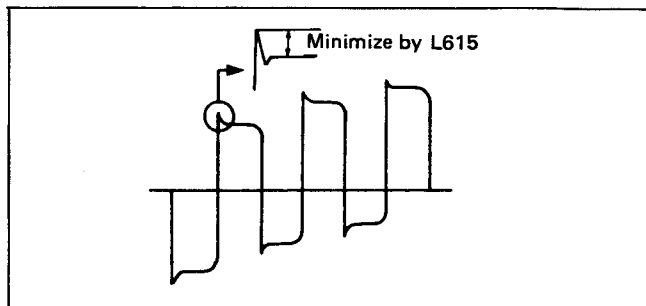


Fig. 35

## 22. SECAM COLOUR OUTPUT ADJUSTMENT

- 1) Set the following control at the position indicated.  
Colour control (R3002) ..... Maximum
- 2) Receive an SECAM colour bar signal.
- 3) Adjust R-Y Gain (R646) and B-Y (R659) controls shown in Fig. 36.

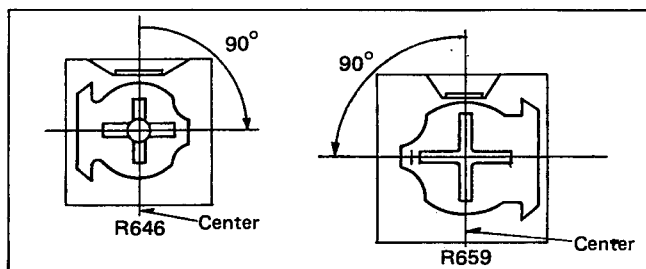


Fig. 36

- 4) Connect an oscilloscope between **TPA12** (B-Output) and chassis GND.
- 5) Adjust R659 and L619 to achieve waveform shown in Fig. 37.

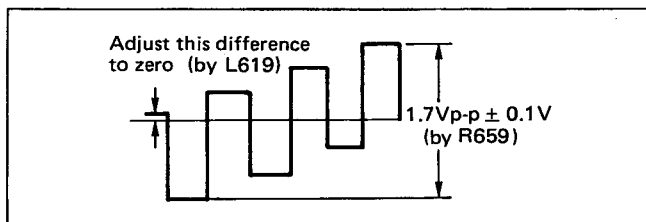


Fig. 37

- 6) Disconnect oscilloscope between **TPA12** (B-Output) and connect oscilloscope to **TPA10** (R-Output).
- 7) Adjust R646 and L611 to achieve waveform shown in Fig. 38.

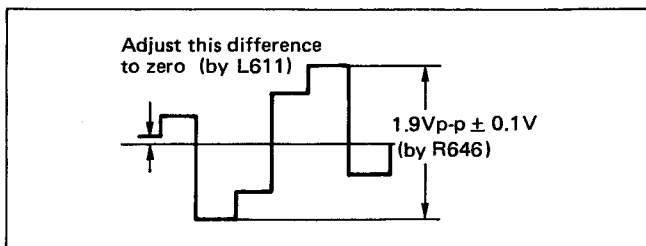


Fig. 38

## INSTALLATION/ADJUSTMENT PROCEDURE

The PT-102N is preset for a 3048 mm (120 inch) screen-FRONT CEILING mode.

Confirm diagonal screen size 1270 ~ 3048 mm (50 ~ 120 inches) and projection mode (6 modes), and choose the proper procedure (A ~ D) from Table 2.

Follow the appropriate procedure (Table 3, A ~ D) to install and adjust the projector properly.

Model	PT-102N/GN/AN/SN		
Screen Size	1270 ~ 1372 mm (50 ~ 54 inch)	1397 ~ 2134 mm (55 ~ 84 inch)	2159 ~ 3048 mm (85 ~ 120 inch)
Mode			
Front Ceiling	(B)	(B)	(D)
Front Floor	(A)	(A)	(C)
Rear Ceiling	(A)	(A)	(C)
Rear Floor	(A)	(A)	(C)
Rear Ceiling with Mirror	(B)	(B)	(D)
Rear Floor with Mirror	(A)	(A)	(C)

[Table 2] Screen Size and Projection Mode

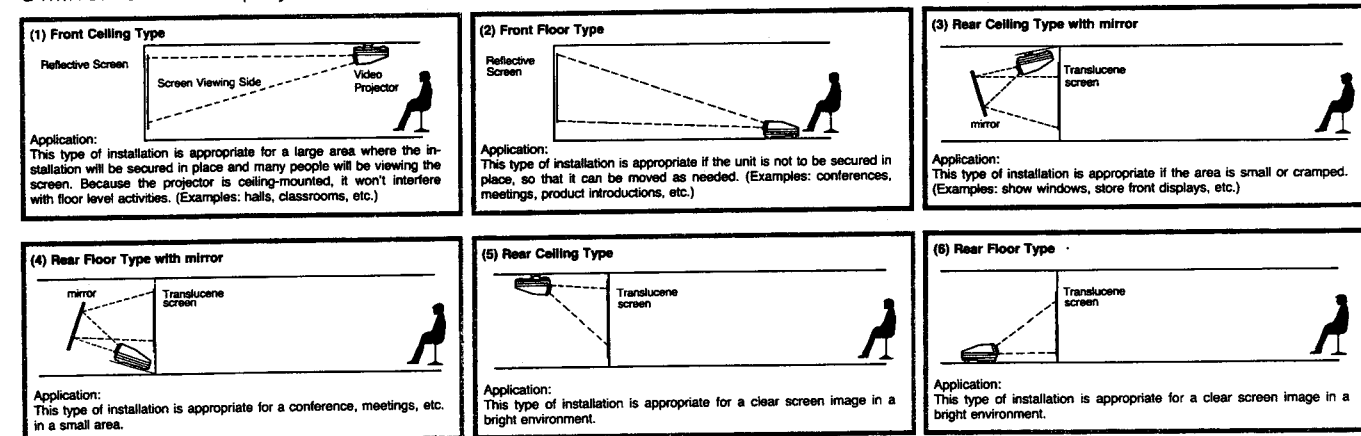
No.	PROCEDURE	(A)	(B)	(C)	(D)
1	Variations on Standard installation	YES	YES	YES	YES
2	Installation	YES	YES	YES	YES
3	Projection Size Adjustment	YES	YES	NO	NO
4	Preparation for Adjustment	YES	YES	YES	YES
5	Lens Focus Adjustment	YES	YES	YES	YES
6	Verification of Image Position	YES	YES	YES	YES
7	Deflection Adjustment	YES	NO	YES	NO
8	Green Raster Adjustment	YES	◆	YES	◆
9	Static Convergence Adjustment	YES	YES	YES	YES
10	Dynamic Convergence Adjustment	YES	YES	YES	◆
11	Shading Correction	◆	◆	◆	◆
12	R.G.B. Mode Adjustment	◆	◆	◆	◆

◆ If necessary

[Table 3] Installation Procedure and Necessary Adjustment

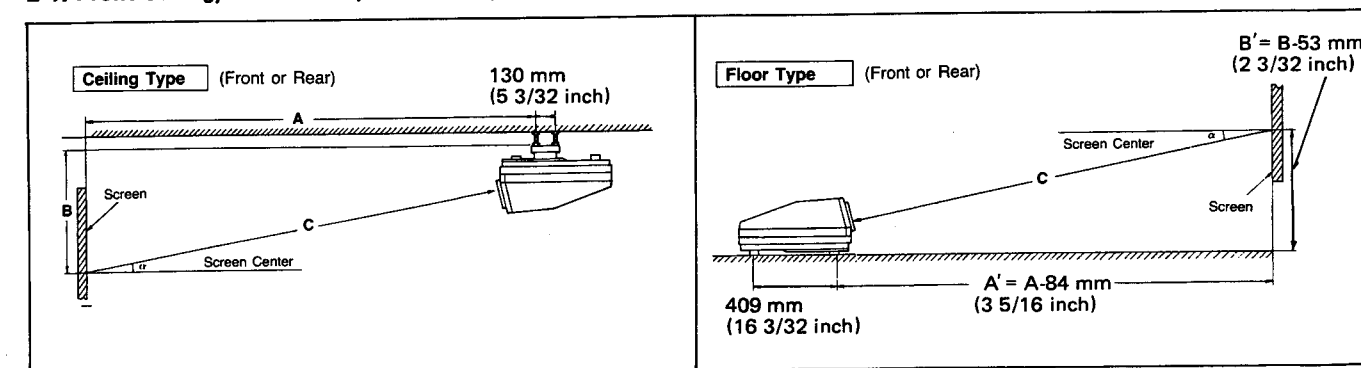
### 1. Variations on Standard Installation

There are two fundamental installation methods: floor placement and ceiling mount, and it is easy to change to the desired method. The method should be selected according to the location of the installation and other circumstances, such as using a mirror for indirect projection in cramped locations, or projection from behind the screen, etc.



### 2. Installation

#### 2-1. Front Ceiling, Front Floor, Rear Ceiling and Rear Floor.

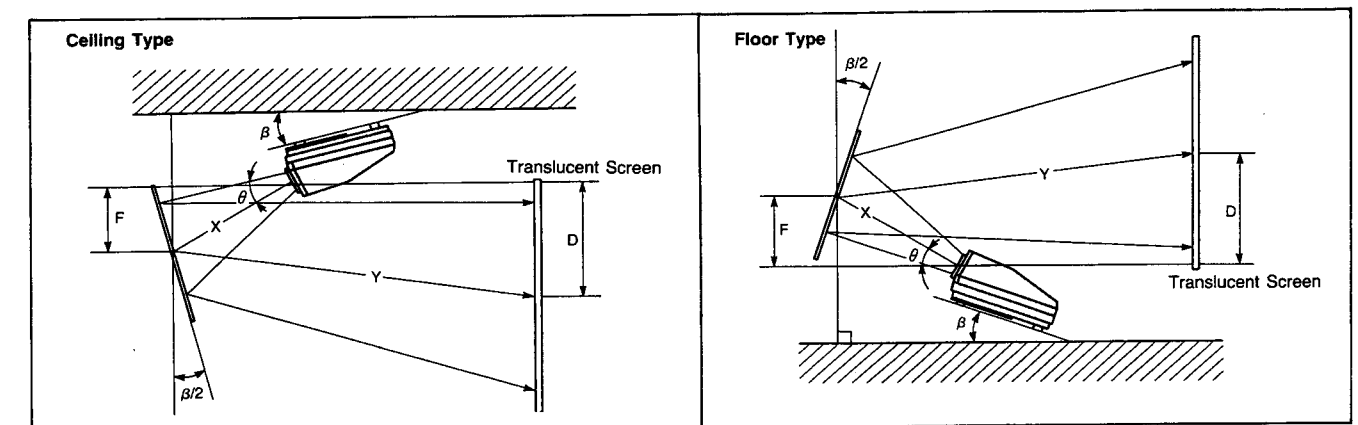


[Table 4] Relationship between screen size and mounting distance.

SCREEN SIZE (Z)	WIDTH (X)	HEIGHT (Y)	A	B	C	$\alpha$
3048 (120)	2438 (96)	1829 (72)	3683 (145)	1125 (44 5/16)	3635 (143 3/32)	13.79°
2540 (100)	2032 (80)	1524 (60)	3104 (122 3/16)	982 (38 11/16)	3037 (119 19/32)	13.79°
2286 (90)	1829 (72)	1372 (54)	2814 (110 13/16)	912 (35 29/32)	2741 (107 29/32)	13.79°
◆ 2134 (84)	◆ 1707 (67 3/16)	◆ 1280 (50 13/32)	◆ 2609 (102 11/16)	◆ 848 (33 13/32)	◆ 2527 (99 1/2)	◆ 13.6°
◆ 1829 (72)	◆ 1463 (57 19/32)	◆ 1097 (43 3/16)	◆ 2304 (90 11/16)	◆ 778 (30 19/32)	◆ 2210 (87)	◆ 13.6°
◆ 1524 (60)	◆ 1219 (48)	◆ 914 (36)	◆ 2066 (81 11/32)	◆ 716 (28 3/16)	◆ 1962 (77 1/4)	◆ 13.6°
◆ 1270 (50)	◆ 1012 (40)	◆ 762 (30)	◆ 1774 (69 27/32)	◆ 640 (25 3/16)	◆ 1670 (65 3/4)	◆ 13.4°

Note: Measurement in mm and (inch).

#### 2-2. Rear Ceiling or Rear Floor with Mirror



$$X + Y = C$$

C = Distance from screen center to lens surface.

(Throw Distance)

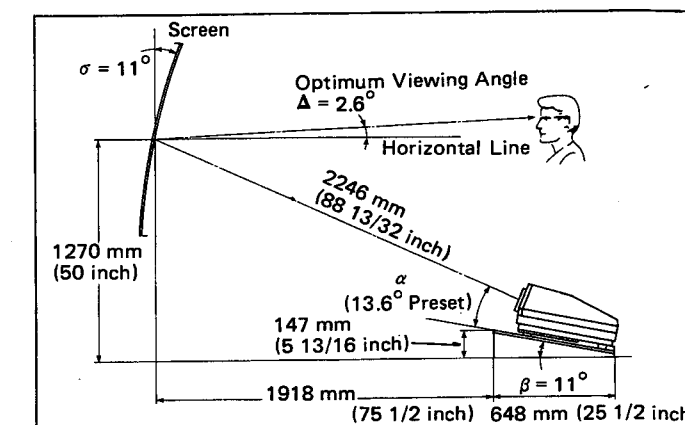
$$F = X \cdot \sin(\theta + \beta)$$

$$D = Y \cdot \sin \theta + F$$

[Example]

Screen Size	$\theta$
1270 (50)	11.33°
1778 (70)	12.42°
2540 (100)	13.1°
3048 (120)	13.4°

#### 3 Semi Curved Screen (ET-721S)



To provide maximum brightness, the projector and screen tilt angle should be properly set for optimum viewing angle.

Screen tilt angle should be nearly same as projector tilt angle ( $\pm 5^\circ$ ).

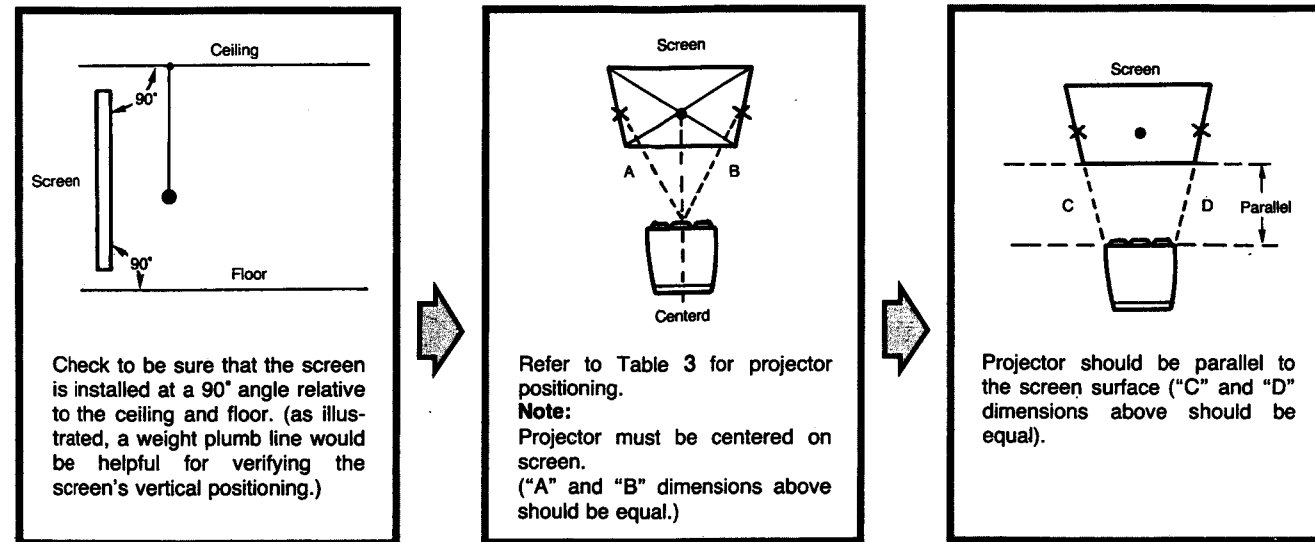
$$\text{Optimum Viewing Angle: } \Delta = \alpha + \beta - 2 \cdot \sigma$$

$\alpha$  : Preset Projection Angle (13.6°)

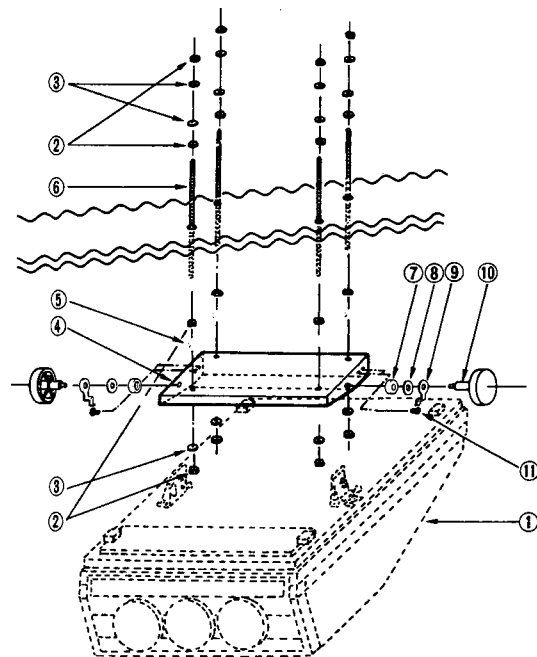
$\beta$  : Projector Tilt Angle

$\sigma$  : Screen Tilt Angle

### 2-3. Projector Positioning



### 2-4. Installation Kit (Ceiling Mount)

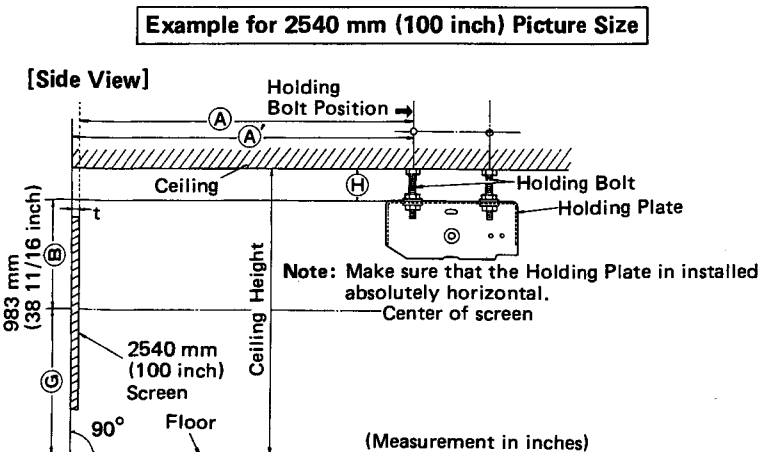


No.	Part Name	Part No.	Pcs.
①	Main Unit	—	—
②	M10-Nut	XNG10B	16
③	M10 Washer	XWH10	12
④	Holding Plate	TKR23410	1
⑤	M10 Spring Washer	XWB10B	4
⑥	M10 Holding Bolt	THE600	4
⑦	Ceiling Washer	TKR23520	2
⑧	Washer	THW70023W	2
⑨	Ceiling Stopper Washer	THW70024	2
⑩	Ceiling Bolt	THE758	2
⑪	Tilt Securing Screw	XYN5+E12S	2

### 2-5. Holding Plate Installation

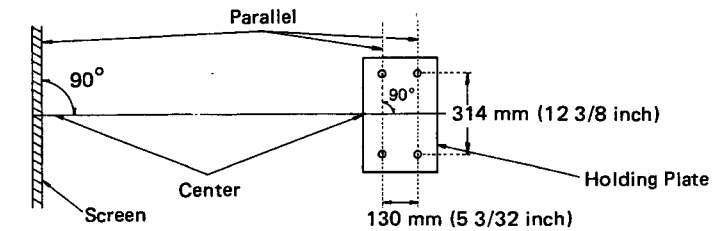
#### 1. Position of Holding Plate

- Decide the distance (A) between the front holding bolts and the wall which will hold the screen.  
 $(A) = 3104 \text{ mm (122 3/16 inch)} + t \text{ mm}$   
 (t: distance between wall and front surface of screen.)
- Calculate the distance (H) between the ceiling and the Holding Plate.  
 $(H) = \text{ceiling height} - (G) - (B) \text{ 983 mm (38 11/16 inch)}$



- Be careful when positioning the 4 bolts. The holding bolts should be parallel to the screen. Also, the center of the screen should match the center of the holding plate as shown in the figure below.

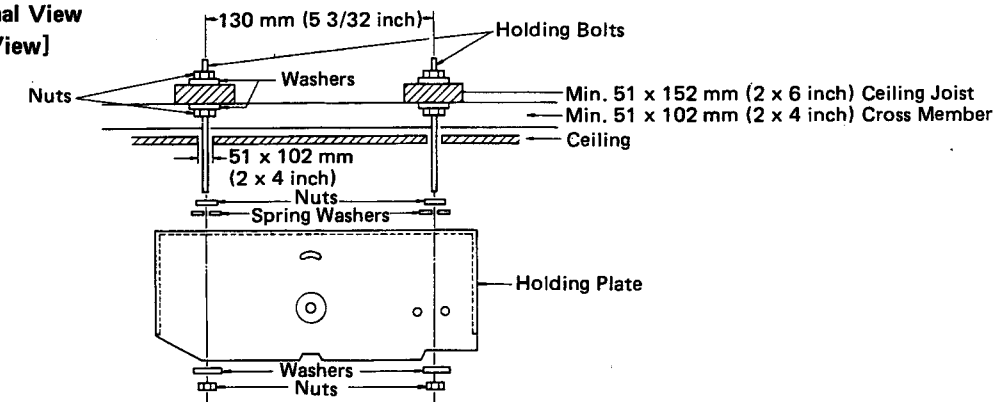
#### [Top View]



### 2. Examples of installation in typical wood frame structures

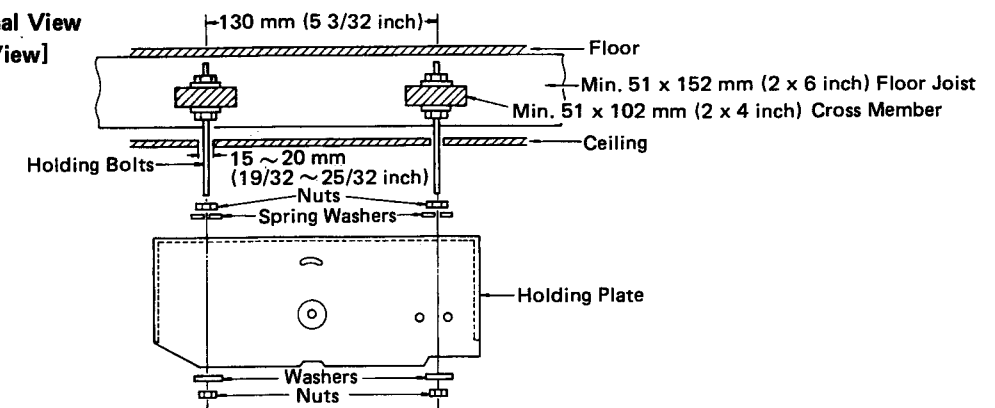
- For installation in single-story structure or on the uppermost floor.

#### Sectional View [Side View]



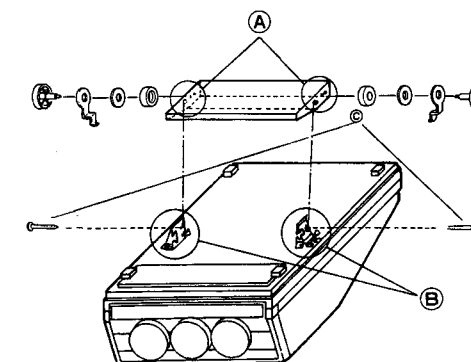
- For installation in ceiling other than on the uppermost floor.

#### Sectional View [Side View]



### 3. Main Unit Installation

- Raise the PT-102N/GN/AN/SN and hook latch (B) to the Pivot (A) on the Holding Plate.
- Set the tilt angle and secure the unit with screw (C).





### 3. Projection Size Adjustment

**WHEN CHANGING THE SCREEN SIZE, FOLLOW THE STEPS AS SHOWN BELOW.**

- (1) Remove the three screws designated "※1" on Fig. 39 and remove the UPPER CABINET.  
Remove the two screws designated "※2" on cabinet sides.  
Remove the two screws designated "※3" and remove the LENS PANEL.

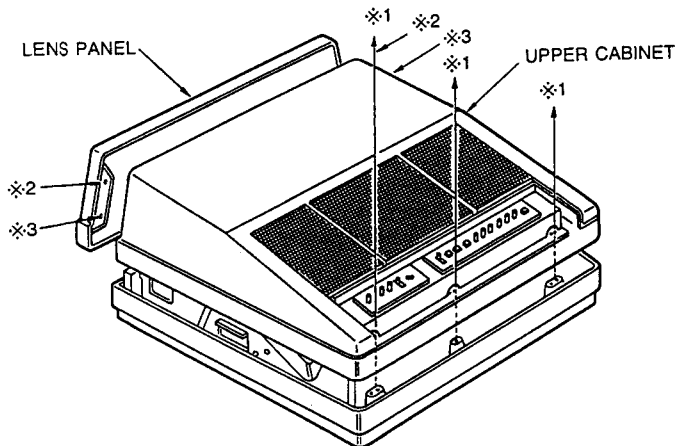


Fig. 39

- (2) Remove the twelve LENS mounting screws (4 per LENS) and remove LENSES and SPACERS.

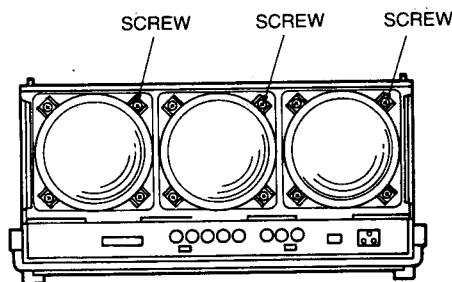


Fig. 40

- (3) Place the unit on its side as illustrated Fig. 41. And loosen the four screws designated "※4" two or three turns. (Do not remove these screws.)

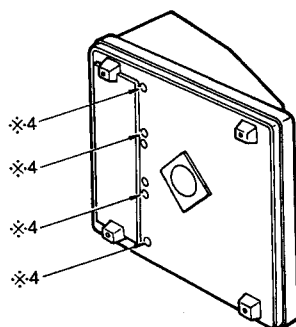


Fig. 41

- (4) Return the unit to its Original position, and remove the four screws designated "※5". [Fig. 42]

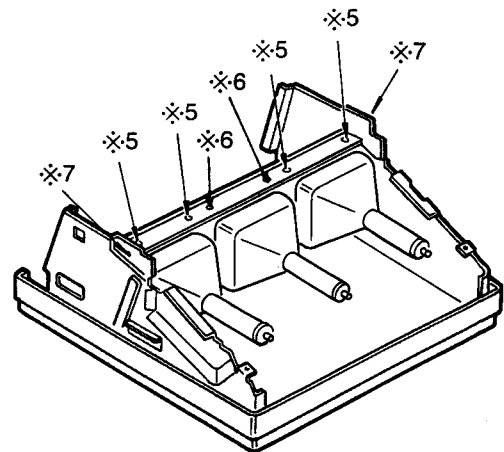


Fig. 42

- (5) Adjust the position of the Red and Blue CRTs for the desired projection size as shown in Table 5 and Fig. 43.

Display Value	Corresponding Size
50	1270 ~ 1372 mm (50 ~ 54 inch)
70	1397 ~ 2134 mm (55 ~ 84 inch)
100	2159 ~ 3048 mm (85 ~ 120 inch)

Table 5

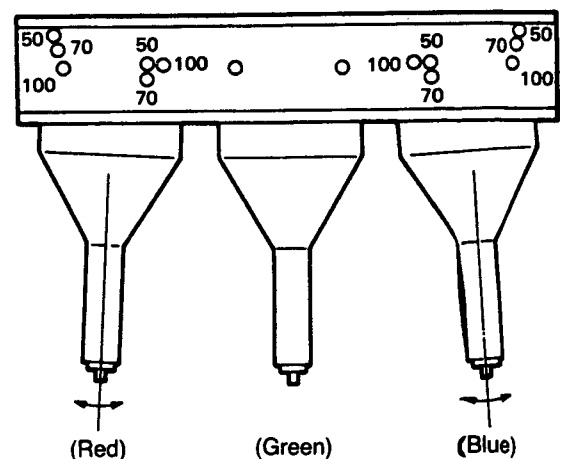


Fig. 43

**Note:**

If you have difficulty adjusting the CRTs, loosen screws "※6" and "※7" [Fig. 42] slightly. Be sure to re-tighten after adjustment.

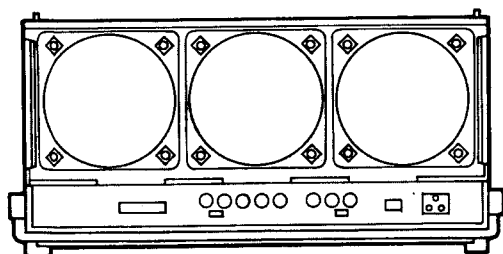
After insuring the proper CRT positions tighten the four "※5" screws [Fig. 42].

Place the unit on its side, and tighten the four "※4" screws. [As in Fig. 41]

- (6) Install the three LENS SPACERS corresponding to the projection size selected in Table 5 and step (5).

(Example) Display Value	LENS SPACER Set
50	50R/50G/50B
70	70R/70G/70B
100	100R/100G/100B

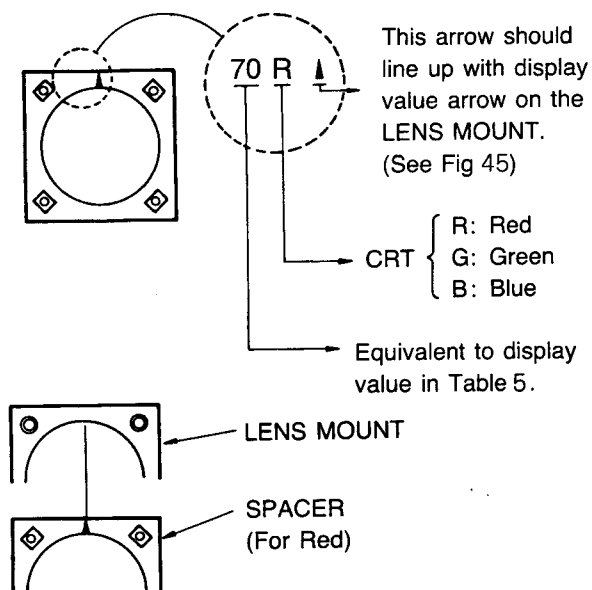
Mount the SPACER as shown in Fig. 44.



[Fig. 44]

(SPACERS are keyed to prevent improper installation.)

Refer to the diagram that follows, for proper SPACER positioning.



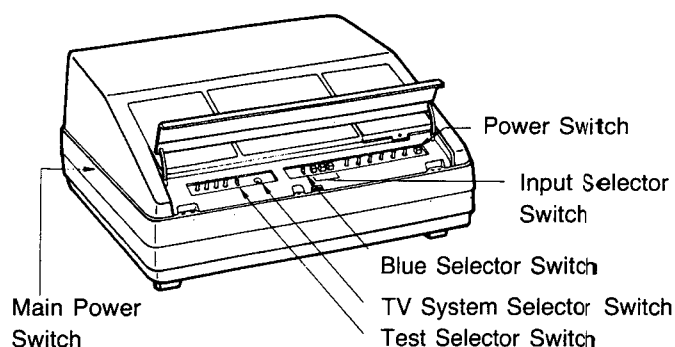
[Fig. 45]

- (7) After mounting the SPACERS, re-install the three LENS units, (4 screws each) [Fig. 40]  
 (8) Refit the LENS PANEL and tighten its four screws "※ 2" and "※ 3" [Fig. 39]  
 (9) After ensuring that a proper picture is displayed, replace the UPPER CABINET and tighten the three screws "※ 1" [Fig. 39]

## 4. Preparation For Adjustment

If the signal input to the Projector is a VIDEO signal, set the signal selector switch to VIDEO; if they are LINE signals, set the switch to LINE; and if they are RGB signals, set the switch to RGB.

- \* If the REMOTE CONTROLLER is connected, use it to set the signal selector switch (RGB/VIDEO/LINE), and to adjust the **Color**, the **Tint**, the **Brightness**, the **Contrast** and the **Sharpness**.



## 5. Lens Focus Adjustment

This operation should only be carried out if there is any difficulty focusing the image. If the focus is adjusted, the convergence will be disturbed and will have to be re-adjusted.

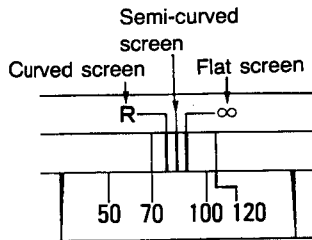
- This unit incorporates a double focus lens newly developed by Panasonic. Therefore, a pair of lenses are available for 1270 to 3048 mm (50 ~ 120 inch) projection, and peripheral focus adjustment has also become easier.

Adjust the focus in the following manner.

**NOTE:** Among the three lenses, a red lens and a green lens are common to each other, but since a blue one is different in spectrum, it has no interchangeability with a red and green lens.

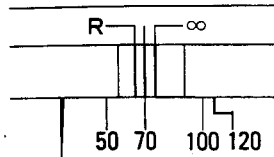
### METHOD OF ADJUSTING FOCUS

- 1) Select one of the RED, GREEN, or BLUE projection CRTs for adjustment.  
(The other two CRTs should be fitted with lens covers.)
- 2) Loosen the wing-nut (D). (Refer to Fig. 46)
- 3) Turn and adjust the lens so that the indications on (A) and (C) coincide with each other according to the type and size of screen used. (A) shows the type of screen, and (C) shows the screen size. (Refer to Fig. 47)



[Fig. 47]

[Example] For projection on 1829 mm (72 inch) semi-curved screen



[Fig. 48]

**Note:** At this time, among the three indents (B scale) between (A) and (C), the indent in the center should be adjusted so that (A) and (C) are connected.

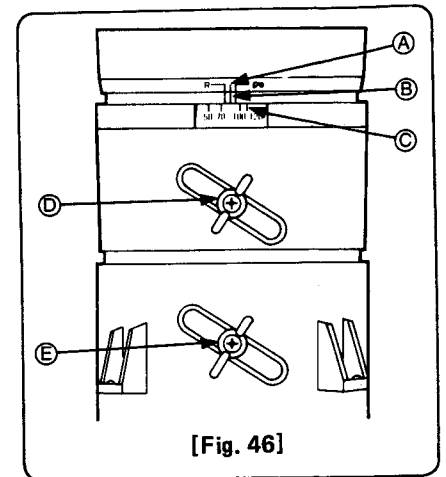
- 4) Fully tighten and secure adjust the wing-nut (D).
- 5) Rotate the lens of the out-of-focus projection CRT after releasing the wing-nut (E) used to fix the projection lens. Adjust the lens to the point at which the scanning lines can be most clearly seen.
- 6) Tighten the wing-nut (E) of the projection lens. Then, adjust the two remaining lenses in the same procedure.

#### Note:

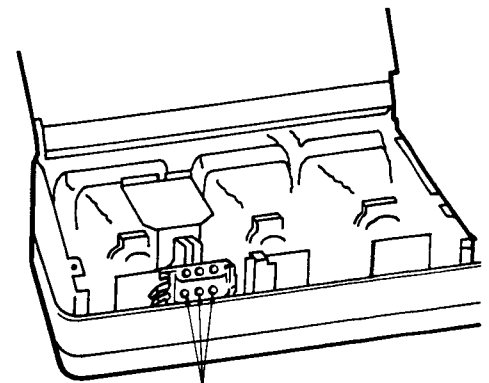
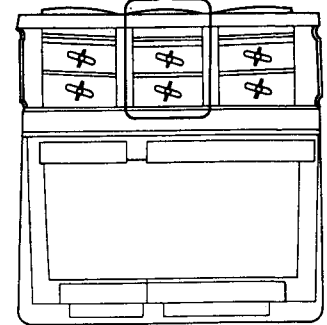
1. If focus can't be obtained by turning the lenses, focus electrically by using the focus control shown in the Fig. 49.  
Make the adjustment by looking the image on the CRT surface.
2. If the focus is adjusted there may be some color divergence.  
This should be corrected by convergence adjustment.

### 6. Verification of Image Position

Turn ON the unit and any other equipment connected to it, and project an image on the screen. Check that the projected image matches the screen position. If the projected image is either too high or low, or to the right or left of the screen, or if the image is bigger at top or bottom or left or right, there is probably an error in the way the equipment was installed and all dimensions should be carefully rechecked.



[Fig. 46]



focus control

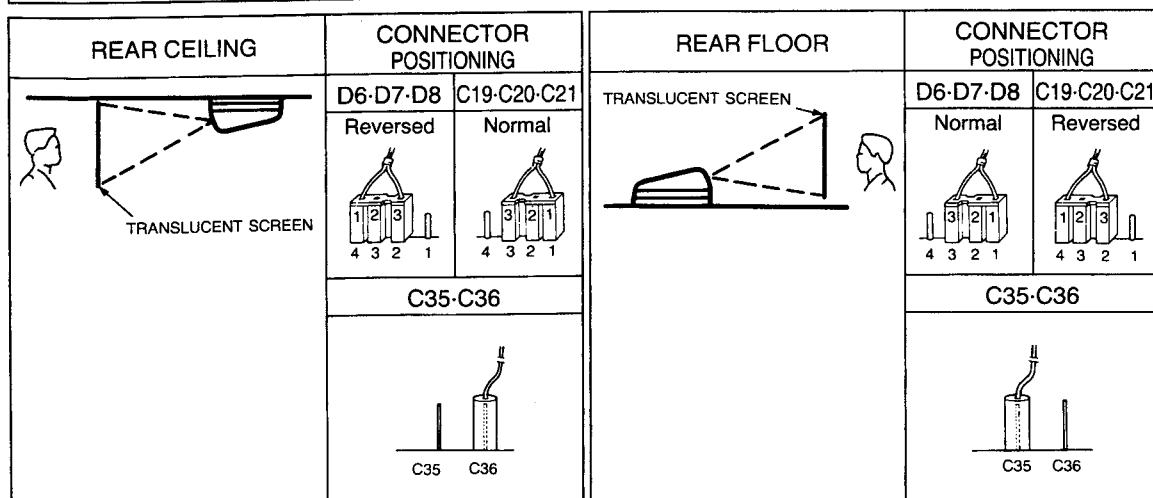
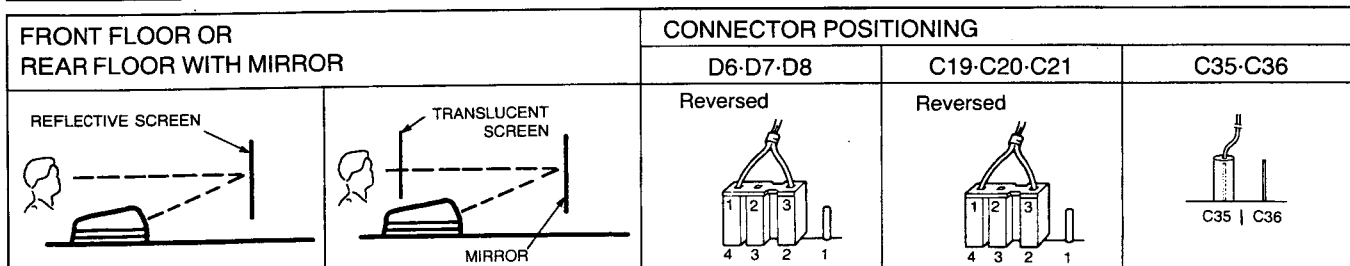
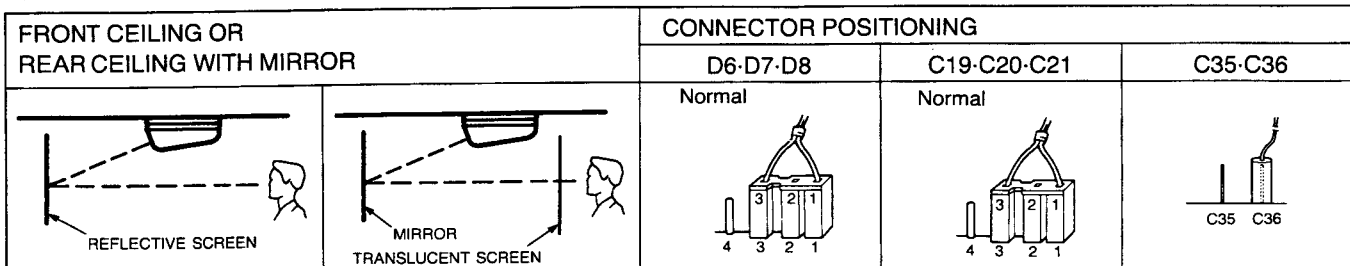
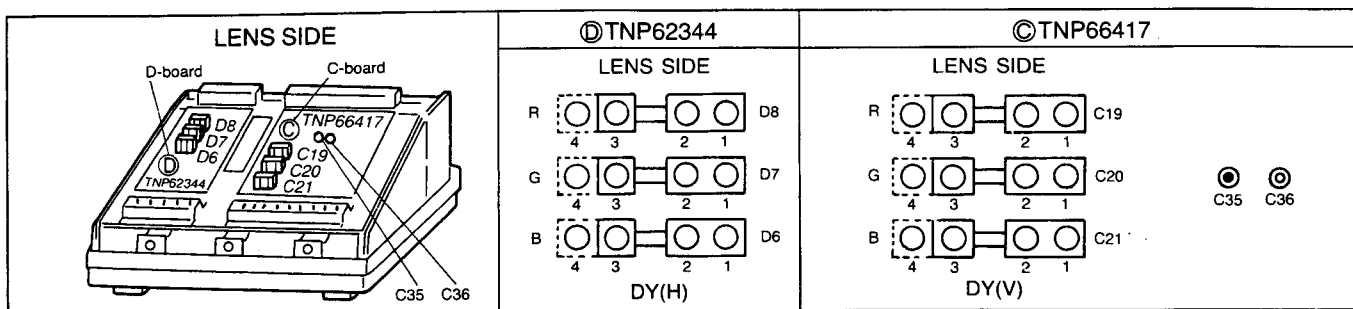
[Fig. 49]

## 7. Deflection Change

1. Turn off the Main Power Switch.
2. Changing the deflection circuit by repositioning the connectors on the D (TNP62344) and C (TNP66417) P.C. Boards allows the PT-102N/GN/AN/SN to be configured for the various projection modes.

### WARNING:

The connectors; D6, D7, D8, C19, C20 and C21 are designed to fit easily onto the connectors pins on the P.C. Boards. They must be reversed (180°) when changing the deflection connections. The unit will not function properly if the connectors are improperly inserted.



## 8. Green Raster Adjustment

**Note;** Adjustment of the GREEN RASTER may not be necessary for FRONT CEILING or REAR CEILING modes.

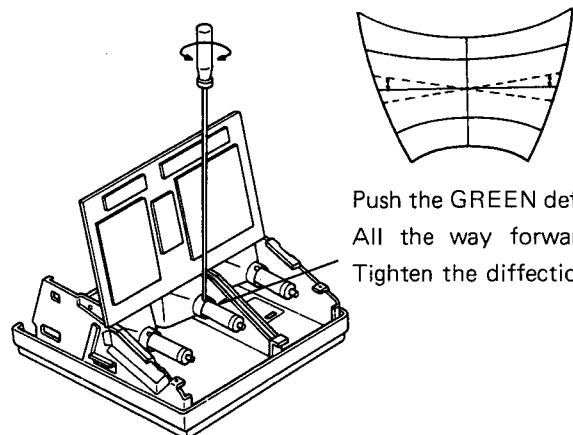
Any controls not mentioned in this manual require the use of precision equipment for adjustment. Any attempt to adjust these controls may prevent satisfactory convergence and raster adjustments.

Carry out the installation adjustments in the order in which they are presented in this manual. Failure to do so may result in it being impossible to carry out satisfactory adjustment.

1. Turn the TEST switch ON and display the TEST (cross-hatch) Pattern.
2. Place Lens covers over the RED and BLUE lenses.

### 3. Horizontal Skew Adjustment

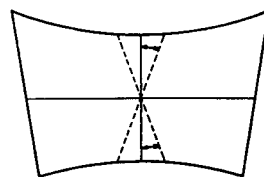
Loosen the GREEN deflection yoke clamp screw and rotate the deflection yoke so that the Horizontal Center Line is horizontal.



Push the GREEN deflection yoke.  
All the way forward on the CRT and  
Tighten the deflection yoke clamp screw.

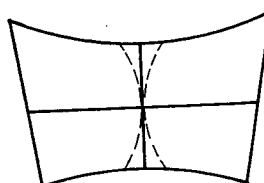
### 4. Vertical Skew Adjustment

Adjust the Vertical Skew control (R7011) to obtain a Vertical Center Line.



### 5. Vertical Bow Adjustment

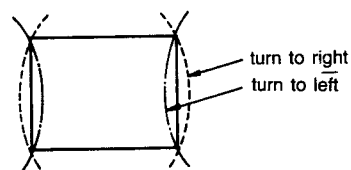
Adjust the Vertical Bow adjustment (R944) so that the Vertical Center Line is straight.



### 6. Side Pincushion Adjustment

Adjust the Side Pincushion control (R993) so that both of the Side Vertical Lines are straight.

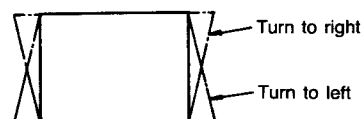
Side Pin-Cushion (R993)



### 7. Side Keystone Adjustment

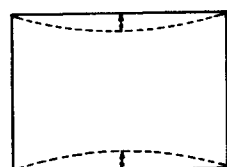
Adjust the Side Keystone control (R986) so that both of the Side Vertical Lines are parallel.

Key-Stone (R986)



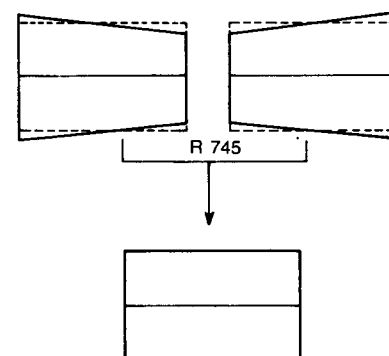
### 8. Top and Bottom Pincushion Adjustment

Adjust the Top and Bottom Pincushion control (R788) so that the Top and Bottom Lines are Straight.



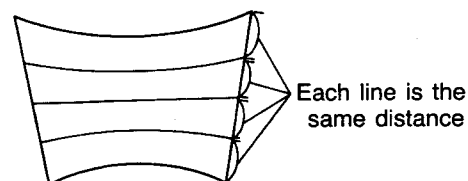
### 9. Top and Bottom Keystone Adjustment

Adjust the Top and Bottom Keystone control (R745) so that the Top and Bottom Lines are parallel.



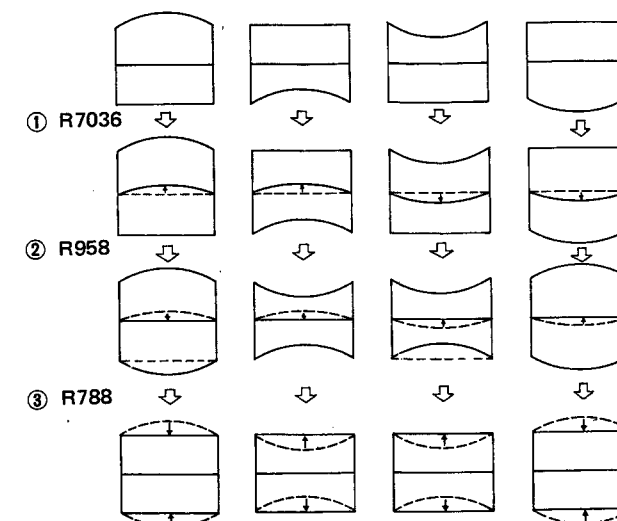
### 10. Vertical Linearity Adjustment

Adjust the Vertical Linearity control (R442) to produce the display shown in Figure.



## 11. Top and Bottom Symmetry Adjustment

When the Top and Bottom of the display are not Symmetrical, as shown below adjust the controls (R788, R7036 and R985).



## 12. Vertical Size Adjustment

Input a PAL or SECAM signal to the VIDEO or LINE input. Set the INPUT SELECTOR Switch to the appropriate position.

Adjust the PAL/SECAM Vertical Size control (R428) for the appropriate picture height.

Input an NTSC signal and set the INPUT SELECTOR switch to NTSC, Adjust the NTSC Vertical Height control (R432) for the appropriate picture height.

**Note;** It is not necessary to adjust the PAL/SECAM Vertical Size control (R428) if the projector will not be used for PAL or SECAM Signals.

## 13. Horizontal Size Adjustment

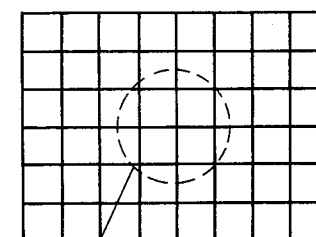
Adjust the Horizontal Size control (R1541) on the D board for the proper picture width.

## 14. Horizontal/Vertical Position Adjustment

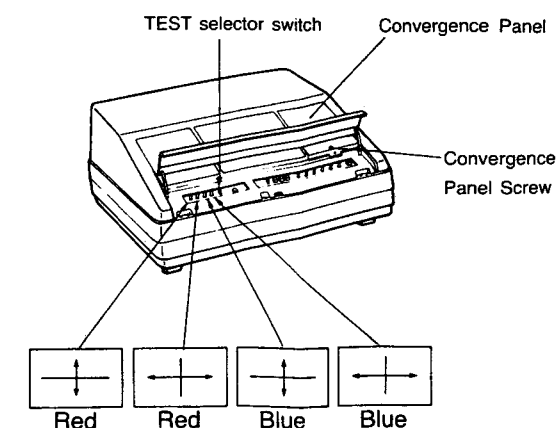
By using the Green Static Convergence controls (R7005 and R7006), Horizontal and Vertical Positioning can be adjusted. These controls are for adjustments at the factory and set the Green Raster as the reference for convergence adjustments. Do not attempt to compensate for installation errors by using these controls.

## 9. Static Convergence Adjustment

1. Turn the TEST selector switch ON and output the CROSS-HATCH PATTERN to check the degree of colour divergence. If there is any divergence, adjust the central convergence controls (R-V, R-H, B-V, B-H).



Make adjustments in regard to this portion.

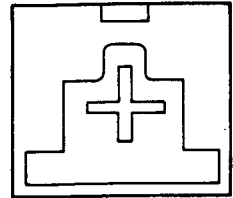


Opening the Convergence Panel.  
Open the operation panel cover and remove the convergence panel screw. While holding the operation panel cover half closed, slide the convergence panel to the middle of the operation panel cover to remove it.

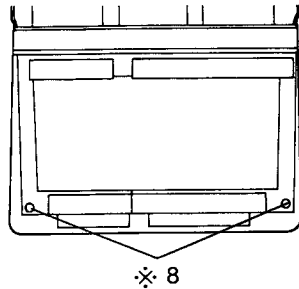
## 10. Dynamic Convergence Adjustment

**Note:** If the Deflection Polarity was not changed (page 28), Dynamic Convergence Adjustment procedures 1. through 6. will not be necessary.

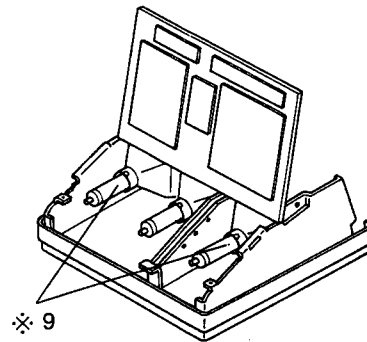
1. Turn off the main power switch.
2. Remove the three screws designated ※1 as in [Fig. 39] and remove the upper cabinet.
3. Set all of the Red and Blue convergence controls (⑤ ~ ④⑥) to the center as in Figure below.



4. Loosen 2 screws ※8 counterclockwise by 90° as in Figure and lift the chassis.



5. Turn on the main power switch. Input an external signal and turn the TEST switch on.
6. Loosen the Red and Blue deflection yoke clamp screws ※9 and rotate the Red and Blue deflection yokes, so that the Red and Blue horizontal center line will be parallel with Green horizontal center line.



Push the Red and Blue deflection yokes all the way forward on the CRTs and tighten the deflection yoke clamp screw of each.

7. Cover the Blue lens with the lens cover.
8. Adjust each of the Red convergence controls in order from ⑤ to ②⑤ as in Fig. 50 so that the Red pattern matches the Green pattern.
9. Cover the Red lens with the Lens cover and perform the operation in 8. for the Blue CRT. Adjust the Blue controls in order from ( ②⑥ ) to ( ④⑥ ).

[Fig. 50]

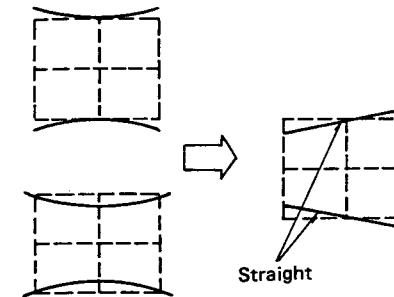
Order of Adjustment VR'S					Function of Adjustment VR'S				
G	B-H	B-V	R-H	R-V	G	B-H	B-V	R-H	R-V
MAIN					MAIN				
①	②⑦	②⑥	⑥	⑤	R788	R928	R907	R892	R870
②	③⑩	③②	⑨	⑪	R7011	R830	R809	R894	R871
③	③①	③③	⑩	⑫	R844	R832	R811	R896	R873
④	③④	②⑧	⑬	⑦	R745	R835	R813	R898	R876
	③⑤	②⑨	⑭	⑧	R837	R815	R800	R890	R878
SUB1					SUB1				
	④⑩	③⑥	⑰	⑮	R839	R817	R801	R880	
B-H	④⑥	④①	③⑦	②⑩	R7024	R841	R819	R804	R882
R-H	②⑤	④②	③⑧	②①	R7203	R843	R821	R805	R884
	④③	③⑨	②②	⑱	R826	R823	R802	R886	
SUB2					SUB2				
G-STATIC	④⑧	④⑦	④⑤	④④	R7005	R7005	R824	R7012	R887
			②④	②③					R7012

Main Adjustment ⑤ to ⑭ for RED - ( ②⑥ to ③⑤ for BLUE)

- 31 -

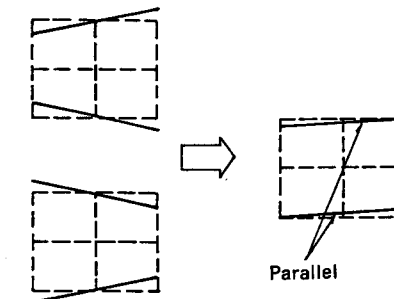
### ⑤(②⑥) Top and bottom pincushion

Rotate R870 (R907) so that both top and bottom horizontal lines are straight.



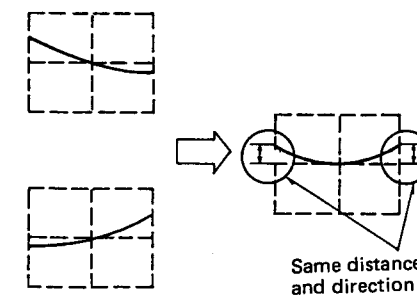
### ⑥(②⑦) Top and bottom key stone

Rotate R892 (R928) so that Top and bottom lines are parallel.



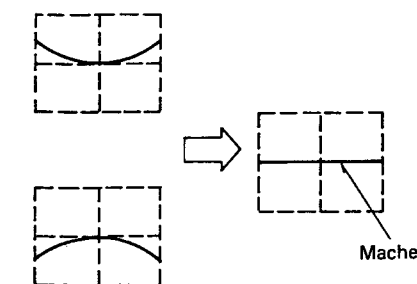
### ⑦(②⑧) Horizontal Skew

Rotate R876 (R913) so that the horizontal center line is at the center and equal distance at each end from the green horizontal center line.



### ⑧(②⑨) Horizontal Bow

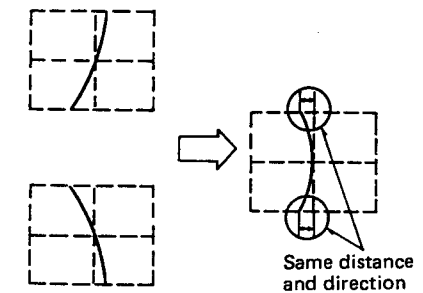
Rotate R878 (R915) so that the horizontal center line matches the green horizontal center line.



If you cannot converge, readjust ⑦(②⑧) (Horizontal Skew)

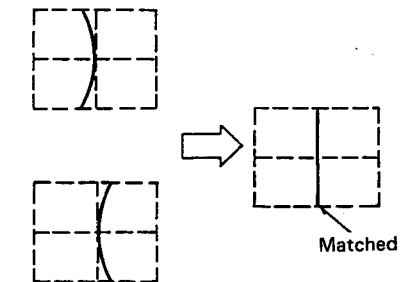
### ⑨(③⑩) Vertical Skew

Rotate R894 (R930) so that the vertical center line is touching at the center and equal distances at each end from green vertical center line.



### ⑩(③①) Vertical Bow

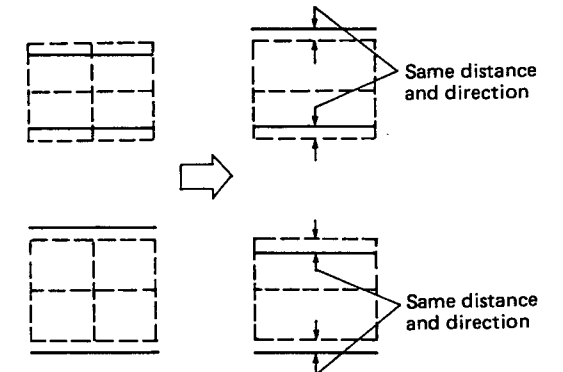
Rotate R896 (R932) so that the vertical center line matches the green vertical center line.



If you can not converge, readjust ⑨(③⑩) (Vertical Skew)

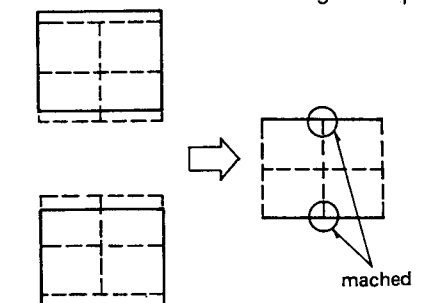
### ⑪(③②) Vertical Size

Rotate R871 (R909) so that at the center of the top and bottom horizontal lines, these lines are the same height as the green lines and that any offset at top and bottom is equal.



### ⑫(③③) Vertical Linearity

Rotate R873 (R911) so that the center of the top and bottom horizontal lines match the center of the green top and bottom lines.

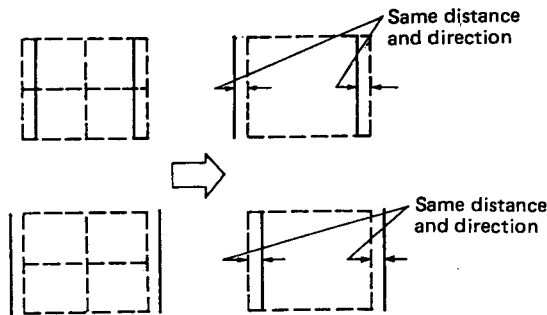


If you can not converge the top and bottom lines readjust ⑪(③②) (Vertical Size)

- 32 -

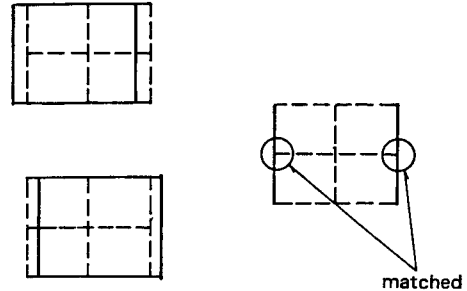
### 13 (34) Horizontal Size

Rotate R898 (R935) so that at the center of the left and right vertical lines, these lines are the same width as the green lines and that any off set at left and right is equal.



### 14 (35) Horizontal Linearity

Rotate R900 (R937) so that the center of the right and left vertical lines match the center of the green right and left lines.



If you can not converge the right and left lines, readjust 13 (34) (Horizontal size)

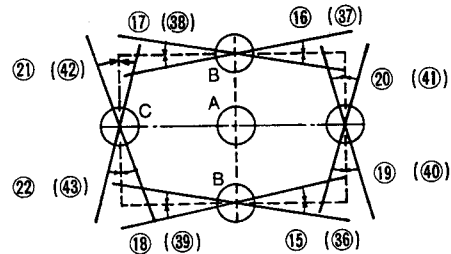
## SUB 1 Adjustment 15 to 22 (36 to 43)

Refer adjust corner convergence ( 15 to 22 ( 36 to 43 ).

- Confirm that the horizontal and vertical center lines of all three rasters cross at the center.
- Confirm that the center of the top and bottom horizontal lines of all three rasters are converged at the center point.
- Confirm that the center of the left and right vertical lines of all three rasters are converged at the center point. If A, B and C are all converged properly.

If they are not converged properly, readjust the main dynamic convergence control SUB 1 control cannot compensate for misconvergence.

Converge the four corners using controls 15 to 22 ( 36 to 43 ).



## SUB 2 Adjustment

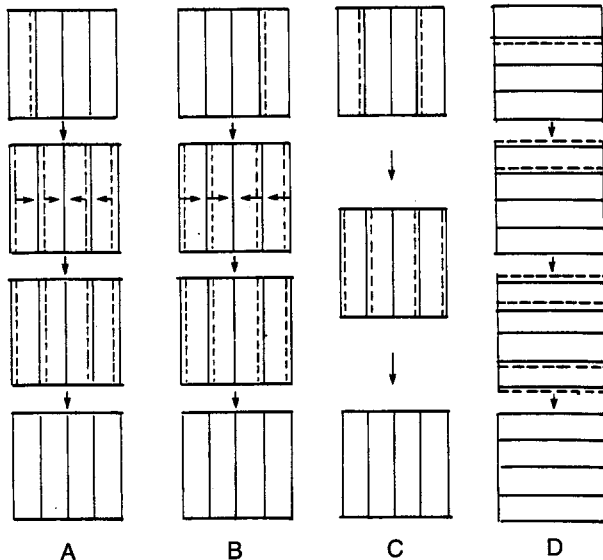
- When the Horizontal linearity is off inside the left (or right) edge of the screen, adjust R7023 (R7024) so that the linearity is offset across the screen towards the center.

By adjusting the right horizontal size R887 (R924), and the horizontal linearity R900 (R937) controls alternately, adjust the picture so that the deviation from the green raster is equal across the screen.

Adjust R898 (R935) the horizontal width control to converge all the vertical lines on the green raster.

- When the Horizontal linearity is off inside both edges of the screen, adjust R7023 (R7024) so that the linearity is offset across the screen towards the center.

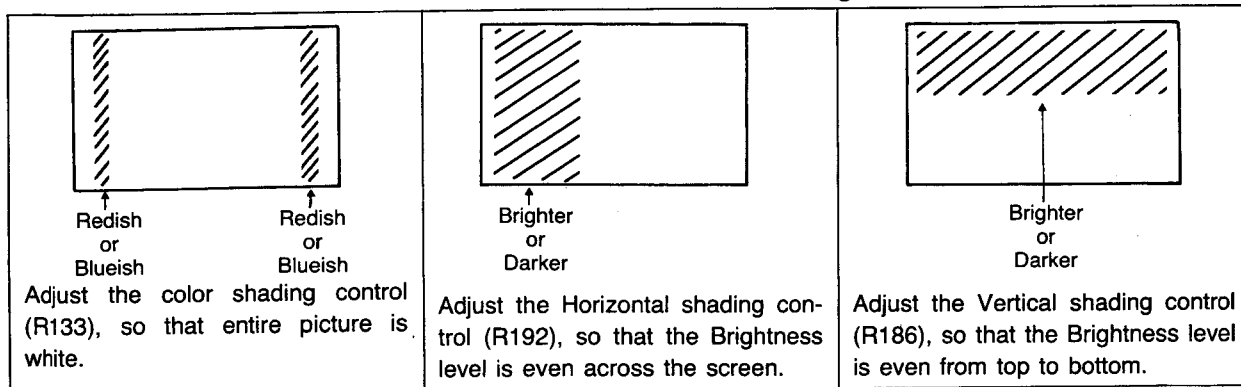
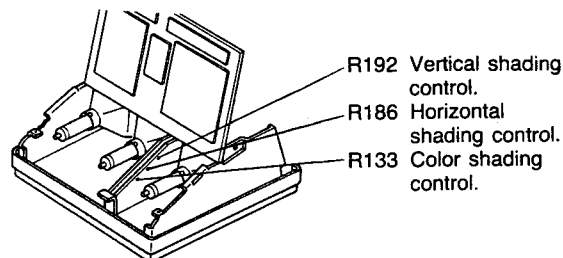
Adjust R898 (R935) the horizontal width control to converge all the vertical lines on the green raster.



- When the linearity is off outside the top (or bottom) edge of the screen, adjust R7012 (R7013) and the vertical linearity R873 (R911) controls alternately, adjust the picture so that the deviation from the green raster is equal across the screen. Adjust R871 (R909) the vertical width control to converge all the horizontal lines on the green raster.

## 11. Shading Connection

Input a white pattern or snow noise signal and turn the Colour Control fully counterclockwise. If brightness or colour appears uneven, adjust the following controls.



## 12. RGB Mode Adjustment

If the abnormal conditions listed below occur when a personal computer is connected to the RGB inputs, the unit is probably not defective. Adjust the respective control to compensate for each condition. The controls indicated have no affect when the unit is not in the RGB mode.

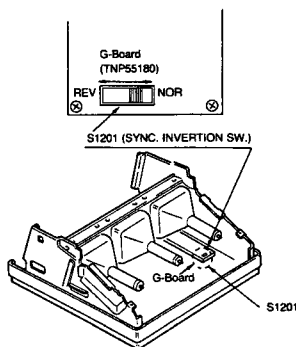
- When the picture is shifted to either the left or the right, adjust it's position with the H-Centering control (R568) on the C-Board.
- When vertical rolling occurs adjust the V-Hold control (R424) on the C-Board.

## Systems Applications

### SYNC INVERTING SWITCH

The purpose of this switch (S1201) is for changing the polarity of the synchronizing signal from the computer.

Normally this switch is at **NOR** position and located on the **G** Board (TNP55180).

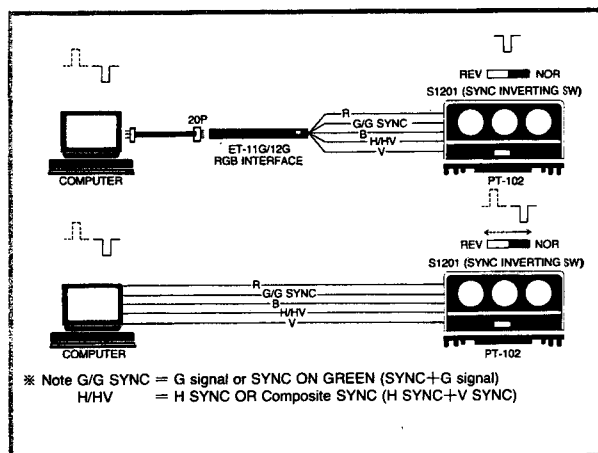
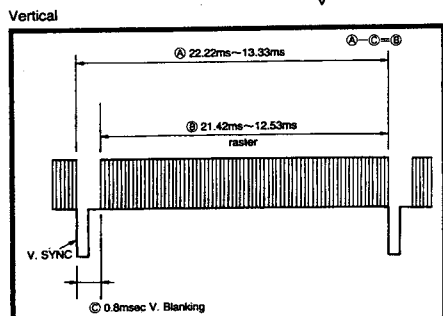


### Computer Application

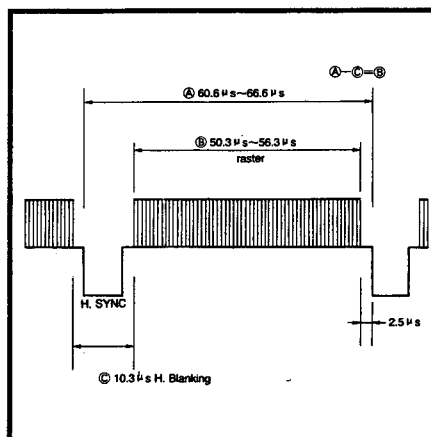
#### PT-102N/GN/AN/SN FREQUENCY TIMING CHART

When PT-102N/GN/AN/SN is connected to the computer, check the scanning frequency (or time), display time and blanking time of horizontal and vertical, compare with the following timing chart.

\* Reference: PT-102N/GN/AN/SN  $f_H = 15.75 \pm 0.75 \text{ kHz}$   
 $f_V = 45 \sim 75 \text{ Hz}$

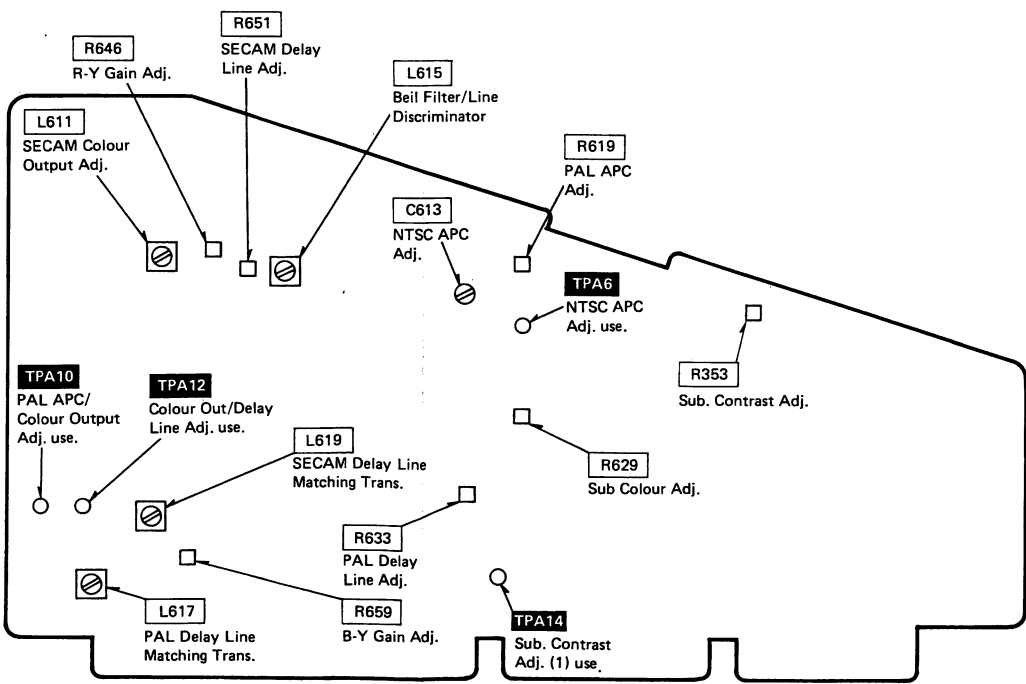
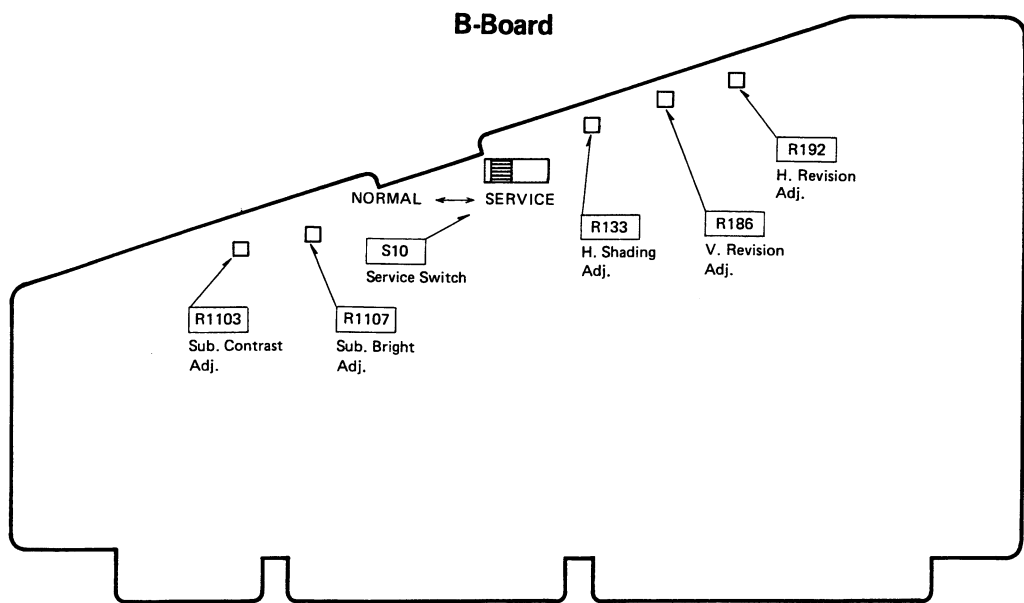
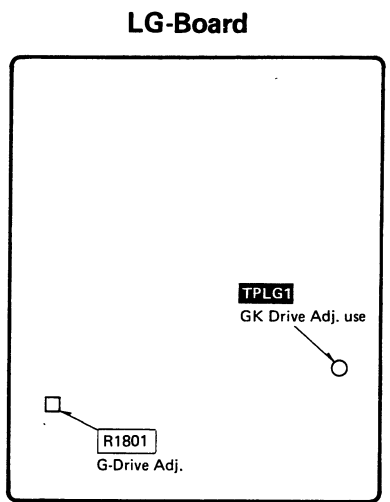
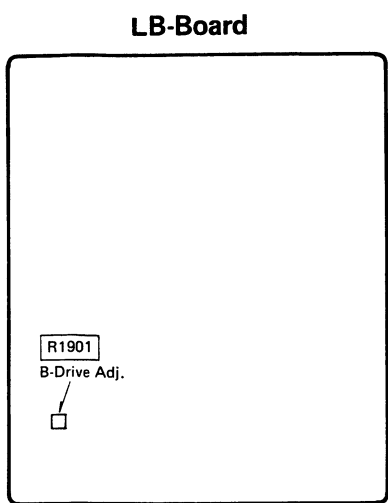
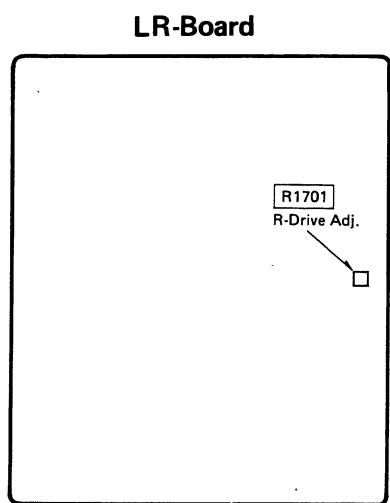
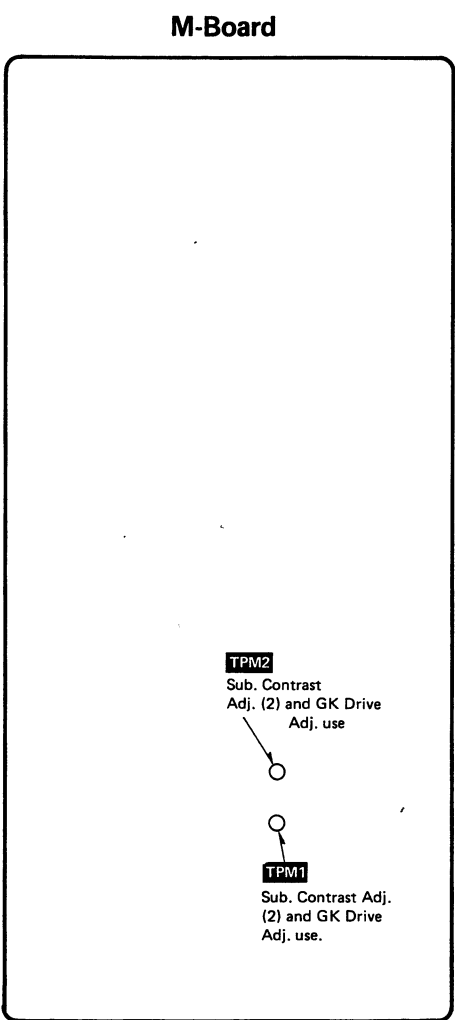
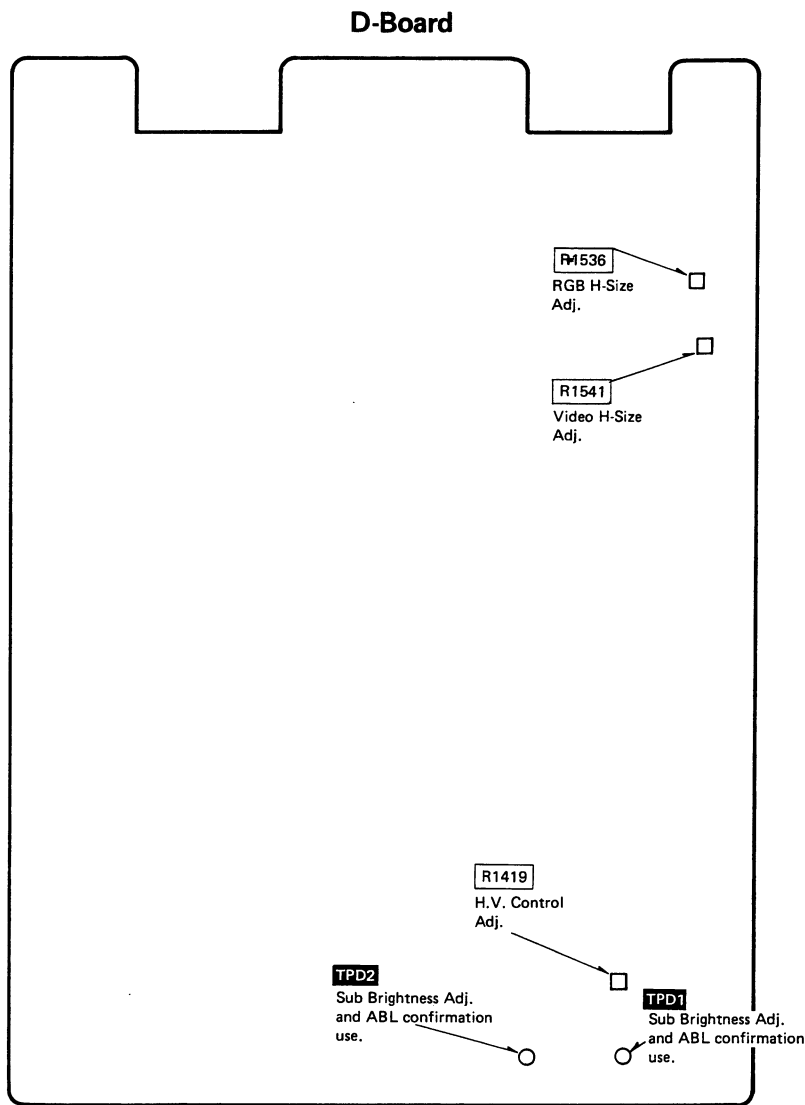


#### Horizontal

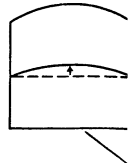




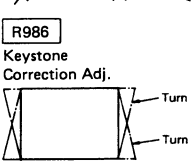
# LOCATION OF TEST POINT AND CONTROLS



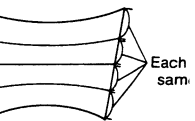
R7036  
T/B Pincushion  
Waveform Adj.



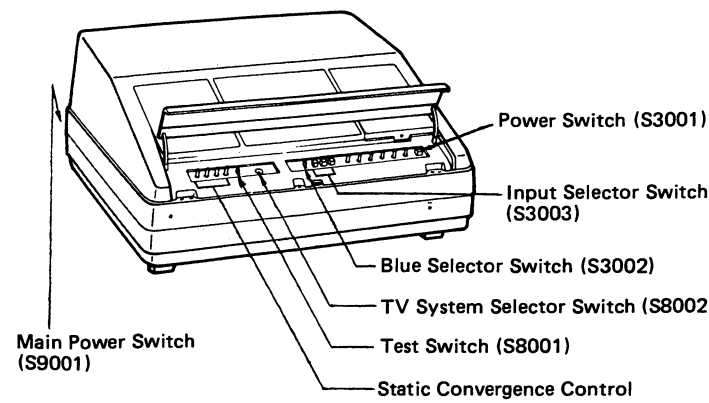
R993  
Side Pincushion  
Compation Adj.



R986  
Keystone  
Correction Adj.

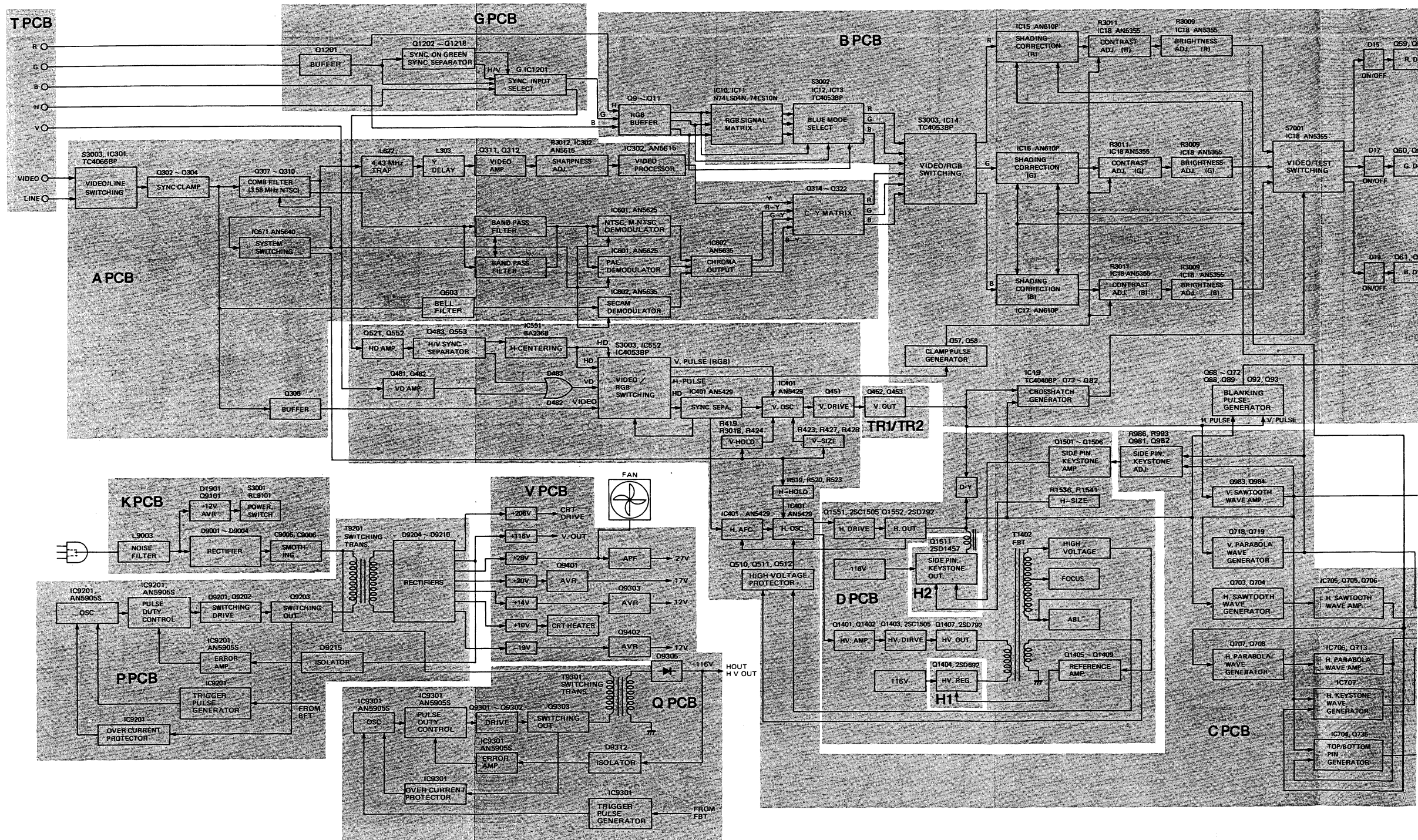


R442  
Vertical Linearity  
Adj.

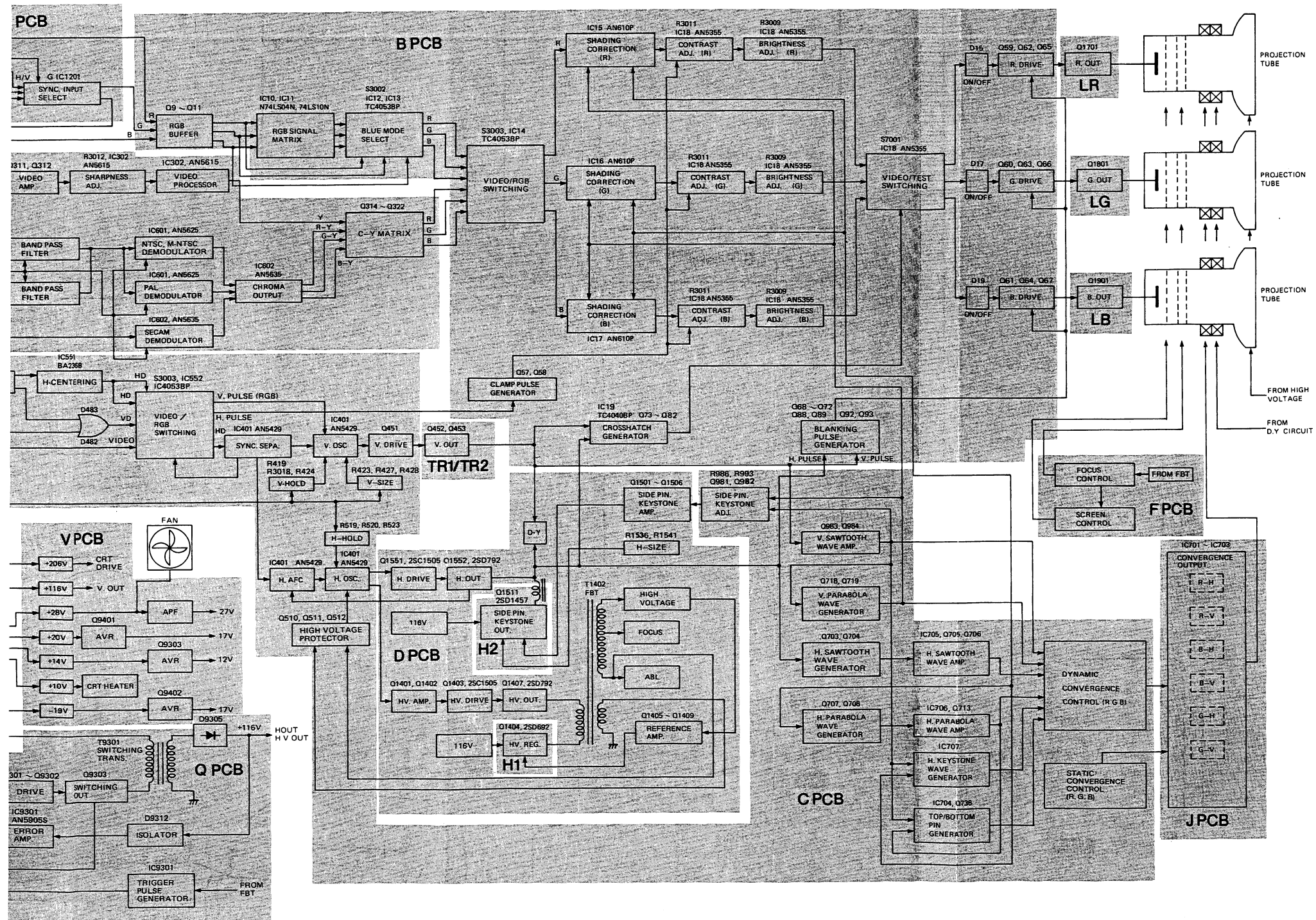




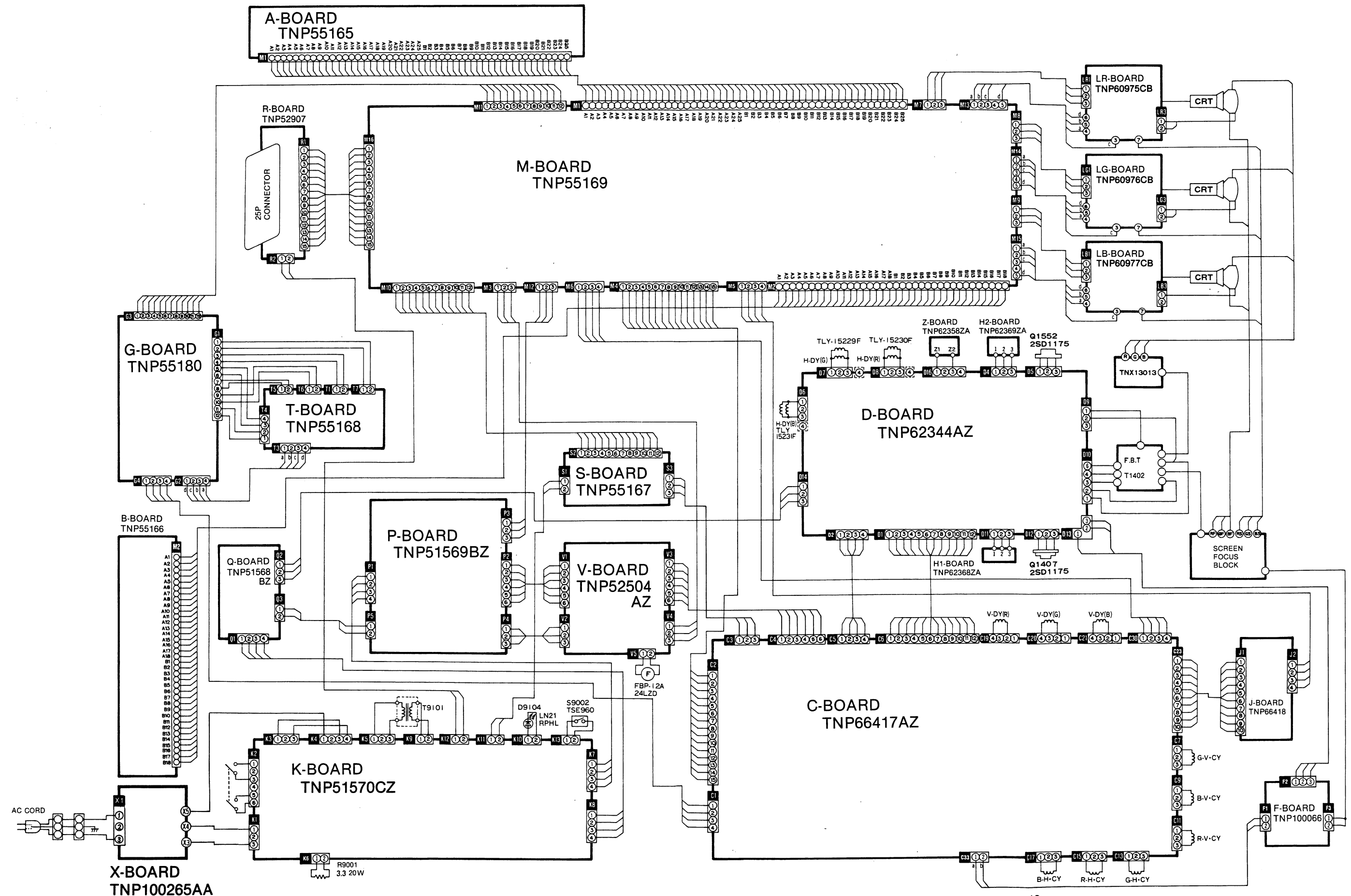
## BLOCK DIAGRAM



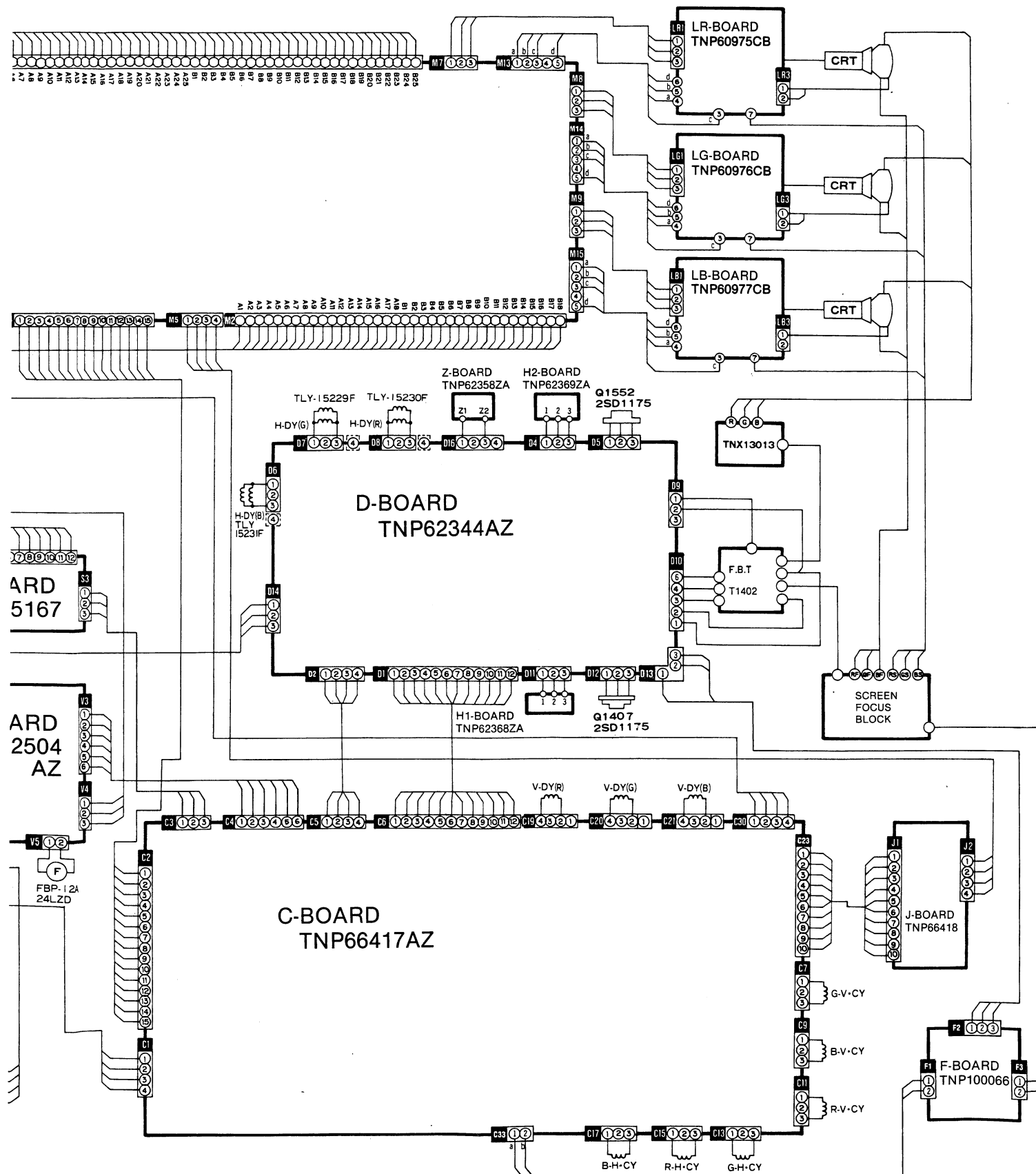


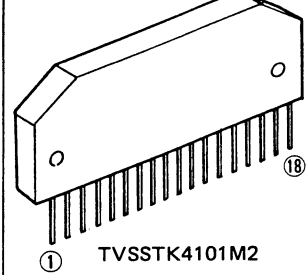
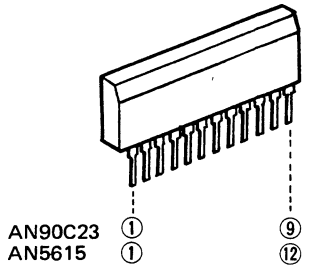
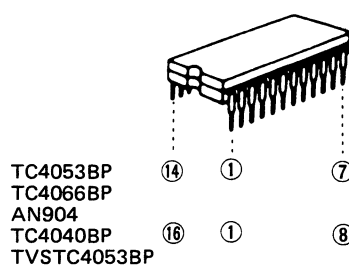
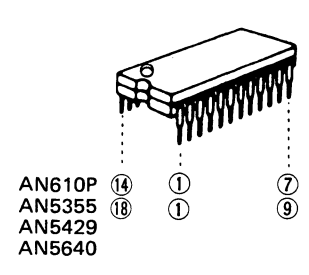
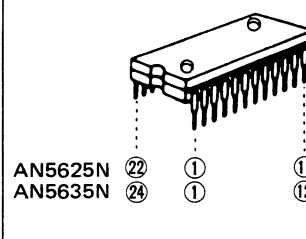
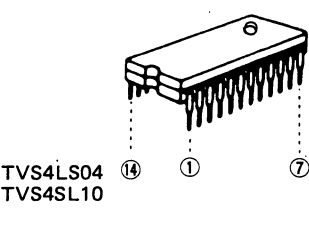
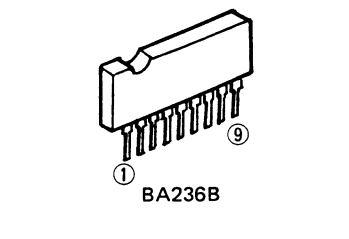
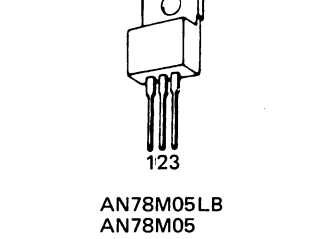
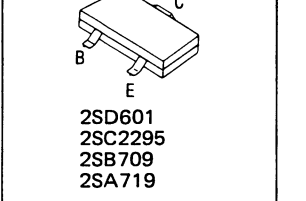
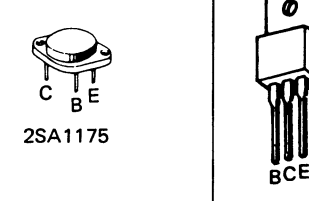
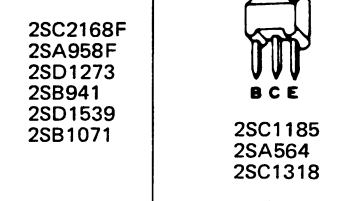
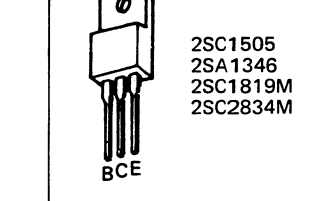
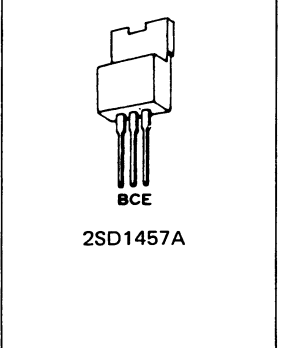
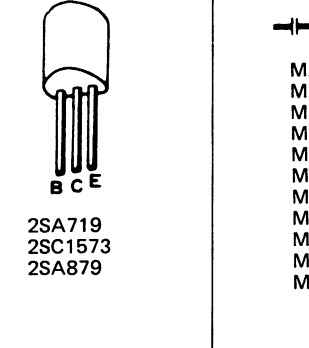
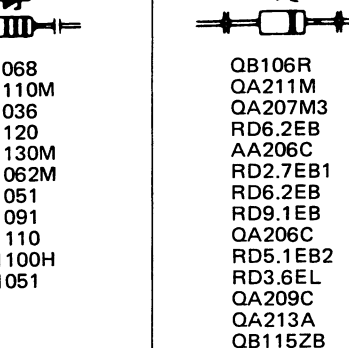
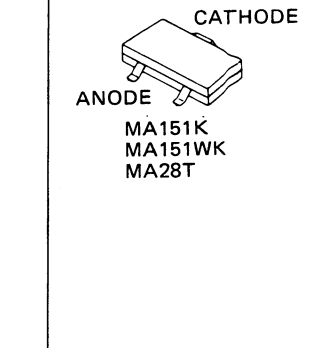
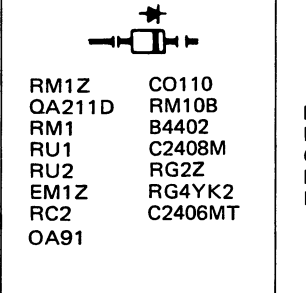
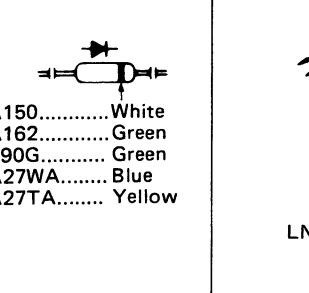
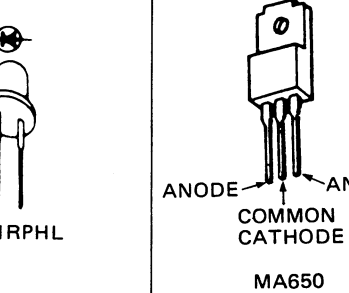
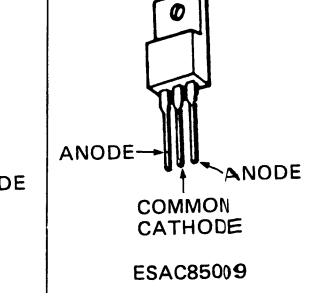
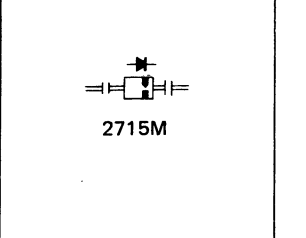
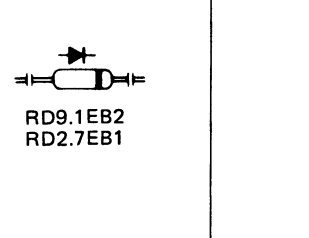
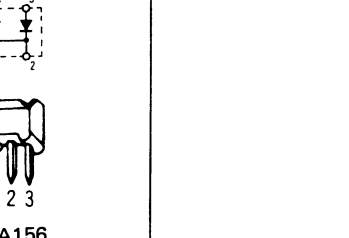



# INTERCONNECTION



## TERMINAL GUIDE OF IC'S, TRANSISTOR ADN DIODES



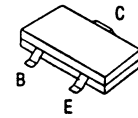
 <p>TVSSTK4101M2</p>	 <p>AN90C23 AN5615</p>	 <p>TC4053BP TC4066BP AN904 TC4040BP TVSTC4053BP</p>	 <p>AN610P AN5355 AN5429 AN5640</p>
 <p>AN5625N AN5635N</p>	 <p>TVS4LS04 TVS4SL10</p>	 <p>BA236B</p>	 <p>AN78M05LB AN78M05</p>
 <p>2SD601 2SC2295 2SB709 2SA719</p>	 <p>2SA1175</p>	 <p>2SC2168F 2SA958F 2SD1273 2SB941 2SD1539 2SB1071</p>	 <p>2SC1185 2SA564 2SC1318</p>
 <p>2SD1457A</p>	 <p>2SA719 2SC1573 2SA879</p>	 <p>MA1068 MA1110M MA1036 MA1120 MA1130M MA1062M MA1051 MA1091 MA1110 MA1100H MA1051</p>	 <p>QB106R QA211M QA207M3 RD6.2EB AA206C RD2.7EB1 RD6.2EB RD9.1EB QA206C RD5.1EB2 RD3.6EL QA209C QA213A QB115ZB</p>
 <p>RM1Z QA211D RM1 RU1 RU2 EM1Z RC2 OA91 CO110 RM10B B4402 C2408M RG2Z RG4YK2 C2406MT</p>	 <p>MA150..... White MA162..... Green OA90G..... Green MA27WA..... Blue MA27TA..... Yellow</p>	 <p>LN21RPHL</p>	 <p>MA650</p>
 <p>2715M</p>	 <p>RD9.1EB2 RD2.7EB1</p>	 <p>MA156</p>	 <p>ESAC85009</p>



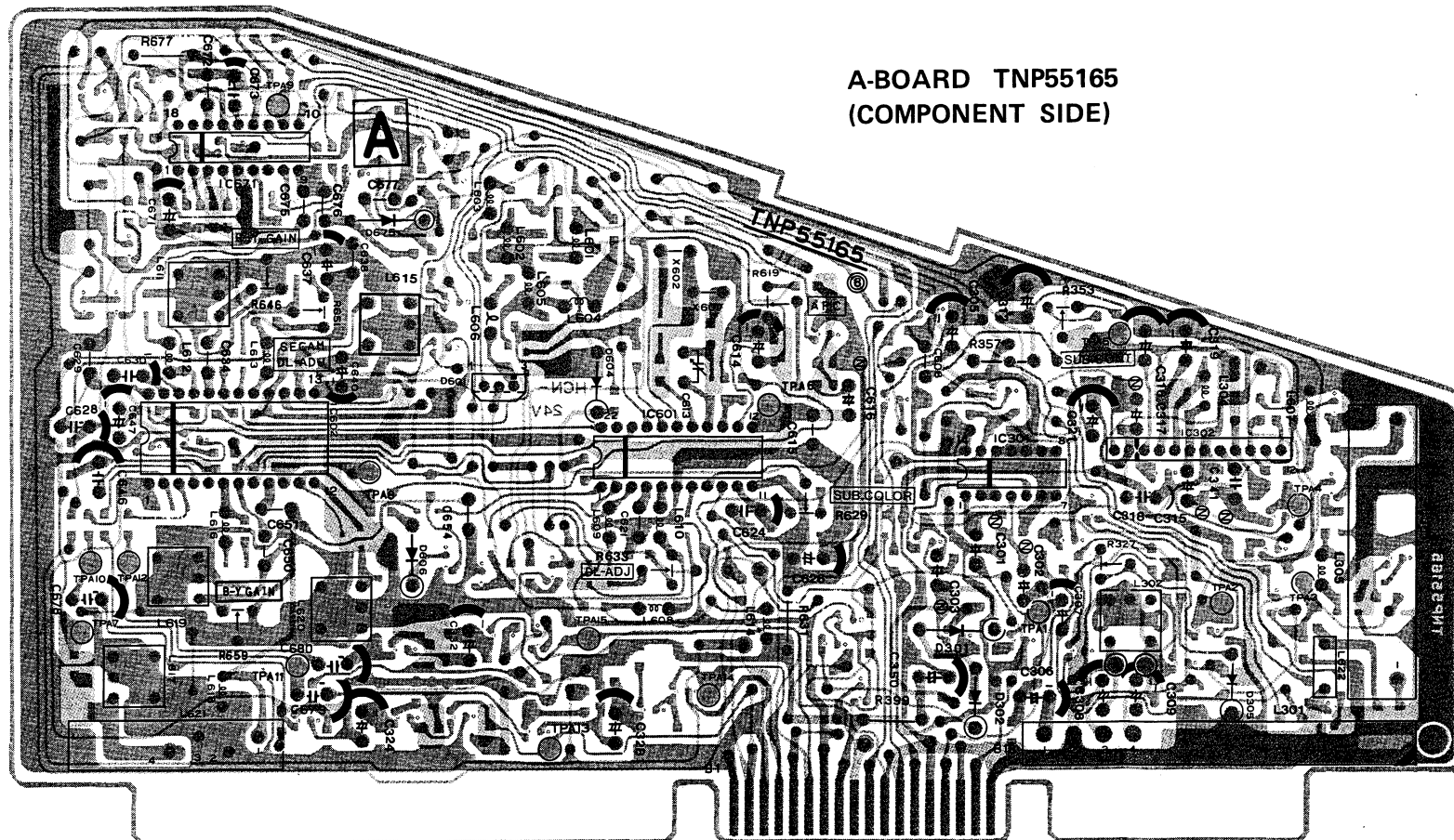
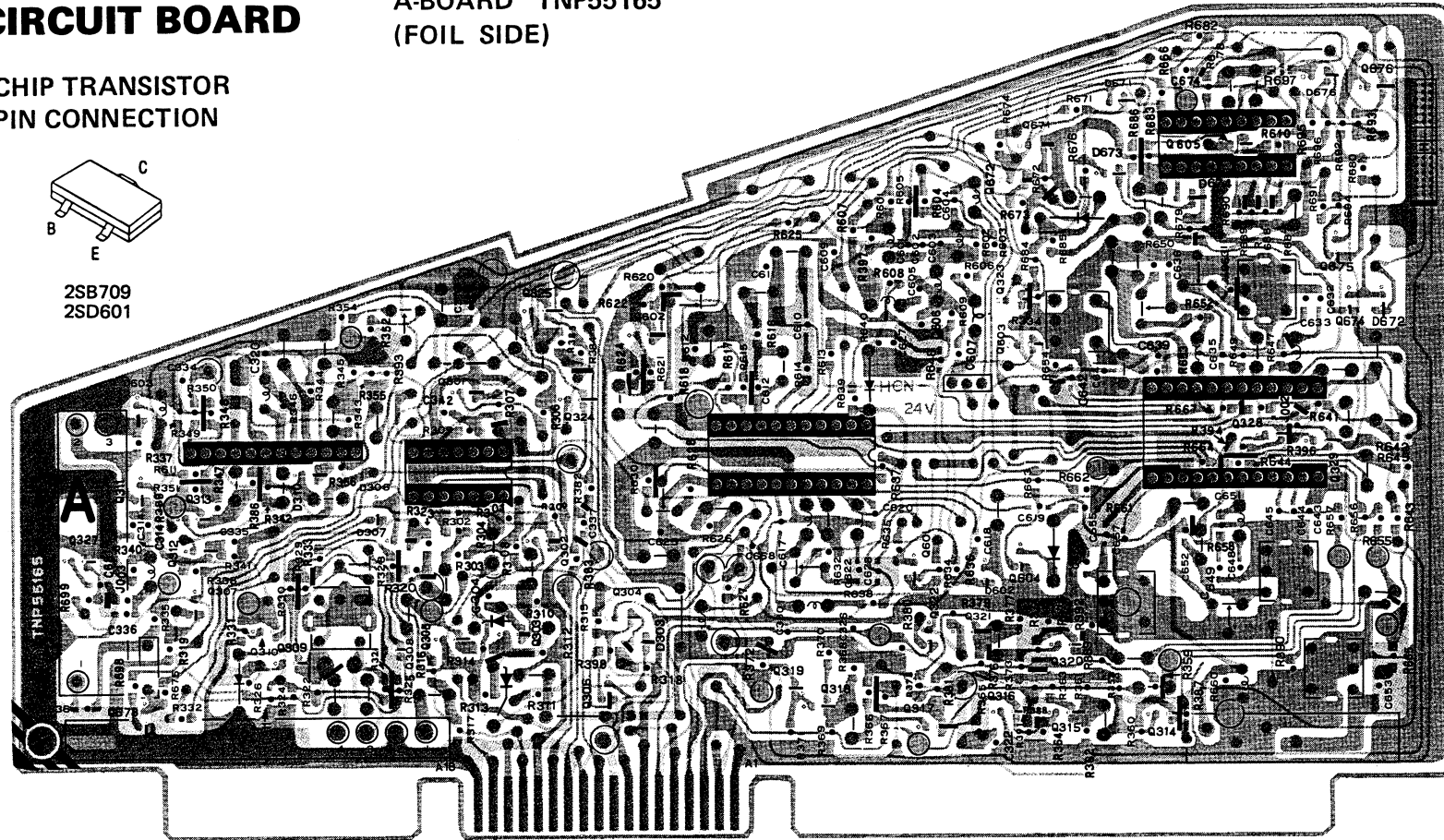
## CIRCUIT BOARD

**A-BOARD TNP55165  
(FOIL SIDE)**

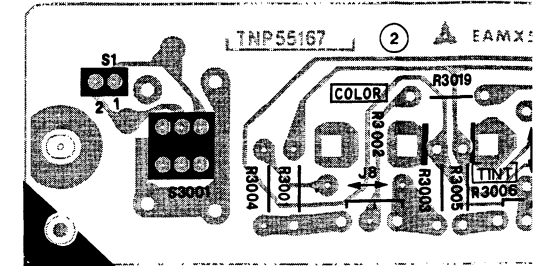
## CHIP TRANSISTOR PIN CONNECTION



2SB709  
2SD601



A-BOARD			
I.C		Q604	E-5 (F)
IC301	B-4 (C)	Q605	F-5 (F)
IC302	B-5 (C)	Q671	F-5 (F)
IC601	B-3 (C)	Q672	F-4 (F)
IC602	B-2 (C)	Q673	D-1 (F)
IC671	C-2 (C)	Q674	E-6 (F)
		Q675	F-6 (F)
		Q676	F-6 (F)
Transistor		VR	
Q301	E-3 (F)	R327	B-5 (C)
Q302	E-3 (F)	R353	C-5 (C)
Q303	D-3 (F)	R619	C-4 (C)
Q304	E-3 (F)	R629	B-4 (C)
Q305	D-2 (F)	R633	B-3 (C)
Q306	D-3 (F)	R646	C-2 (C)
Q307	E-2 (F)	R651	C-2 (C)
Q308	D-2 (F)	R659	A-2 (C)
Q309	D-2 (F)		
Q310	D-2 (F)	Test Point	
Q311	E-1 (F)	TPA1	A-4 (C)
Q312	E-1 (F)	TPA2	B-5 (C)
Q313	E-2 (F)	TPA3	B-6 (C)
Q314	D-5 (F)	TPA4	B-6 (C)
Q315	D-5 (F)	TPA5	C-5 (C)
Q316	D-4 (F)	TPA6	B-4 (C)
Q317	D-4 (F)	TPA7	A-1 (C)
Q318	D-4 (F)	TPA8	B-2 (C)
Q319	D-4 (F)	TPA9	C-2 (C)
Q320	D-5 (F)	TPA10	C-1 (C)
Q321	D-4 (F)	TPA11	A-2 (C)
Q323	F-4 (F)	TPA12	B-1 (C)
Q324	E-3 (F)	TPA13	A-3 (C)
Q325	F-3 (F)	TPA14	A-3 (C)
Q601	E-4 (F)	TPA15	A-3 (C)
Q602	E-1 (F)		
Q603	E-4 (F)		

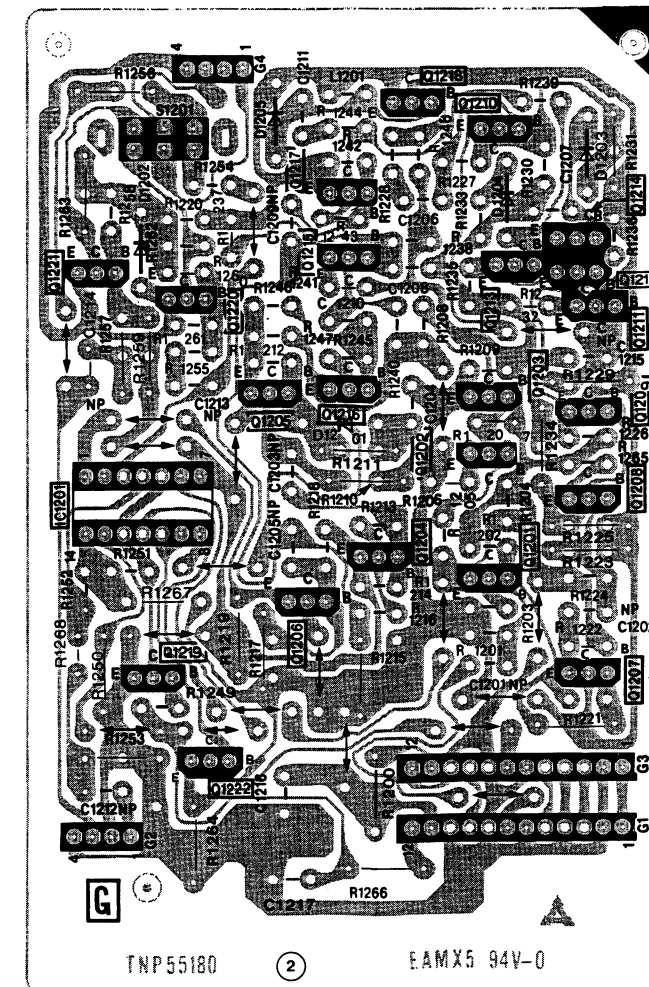


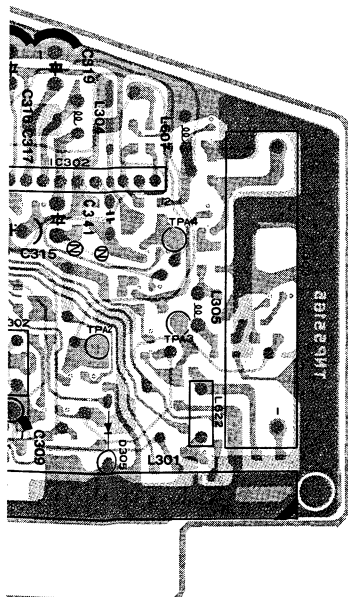
ADDRESS INFORMATION  
 © ... COMPONENT SIDE  
 ® ... FOIL SIDE

**G-BOARD TNP55180**

G-BOARD	
I.C	
IC1201	B-7
Transistor	
Q1201	B-8
Q1202	C-8
Q1203	C-8
Q1204	B-8
Q1205	C-7
Q1206	B-7
Q1207	B-7
Q1208	B-8
Q1209	C-8
Q1210	D-8
Q1211	C-8
Q1212	C-8
Q1213	C-8
Q1214	C-8
Q1215	C-8
Q1216	C-8
Q1217	D-7
Q1218	D-8
Q1219	B-7

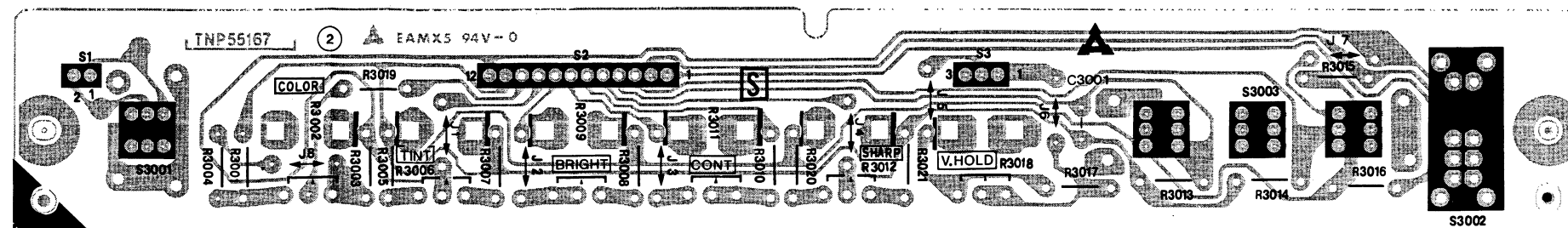
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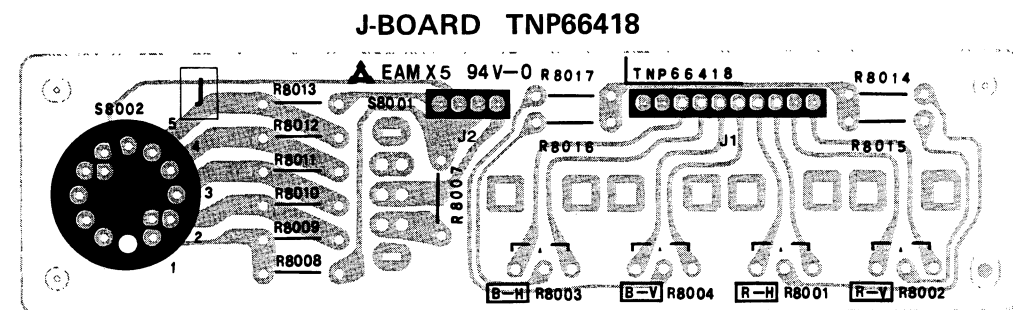


A-BOARD				
I.C			Q604	E-5 (F)
IC301	B-4 (C)		Q605	F-5 (F)
IC302	B-5 (C)		Q671	F-5 (F)
IC601	B-3 (C)		Q672	F-4 (F)
IC602	B-2 (C)		Q673	D-1 (F)
IC671	C-2 (C)		Q674	E-6 (F)
			Q675	F-6 (F)
			Q676	F-6 (F)
Transistor			VR	
Q301	E-3 (F)		R327	B-5 (C)
Q302	E-3 (F)		R353	C-5 (C)
Q303	D-3 (F)		R619	C-4 (C)
Q304	E-3 (F)		R629	B-4 (C)
Q305	D-2 (F)		R633	B-3 (C)
Q306	D-3 (F)		R646	C-2 (C)
Q307	E-2 (F)		R651	C-2 (C)
Q308	D-2 (F)		R659	A-2 (C)
Q309	D-2 (F)			
Q310	D-2 (F)		Test Point	
Q311	E-1 (F)		TPA1	A-4 (C)
Q312	E-1 (F)		TPA2	B-5 (C)
Q313	E-2 (F)		TPA3	B-6 (C)
Q314	D-5 (F)		TPA4	B-6 (C)
Q315	D-5 (F)		TPA5	C-5 (C)
Q316	D-4 (F)		TPA6	B-4 (C)
Q317	D-4 (F)		TPA7	A-1 (C)
Q318	D-4 (F)		TPA8	B-2 (C)
Q319	D-4 (F)		TPA9	C-2 (C)
Q320	D-5 (F)		TPA10	C-1 (C)
Q321	D-4 (F)		TPA11	A-2 (C)
Q323	F-4 (F)		TPA12	B-1 (C)
Q324	E-3 (F)		TPA13	A-3 (C)
Q325	F-3 (F)		TPA14	A-3 (C)
Q601	E-4 (F)		TPA15	A-3 (C)
Q602	E-1 (F)			
Q603	E-4 (F)			

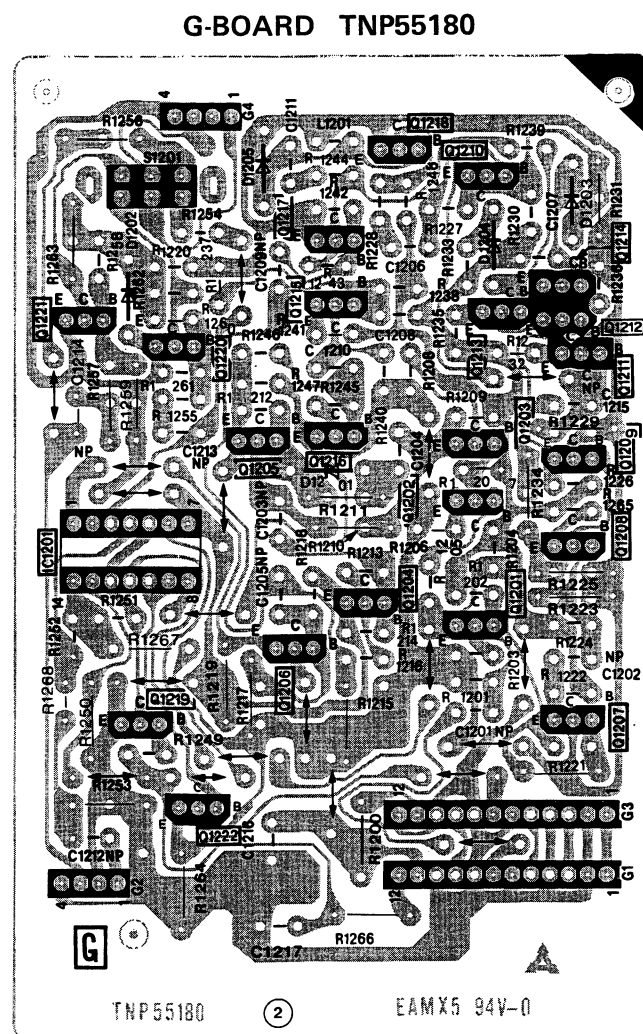
ADDRESS INFORMATION  
 © ... COMPONENT SIDE  
 ® ... FOIL SIDE



**S-BOARD TNP55167**



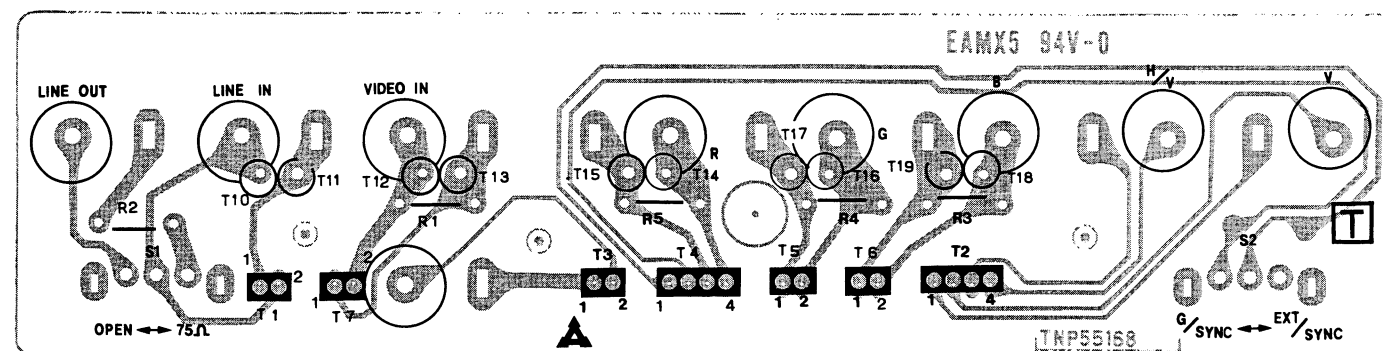
**J-BBOARD TNP66418**



**G-BOARD TNP55180**

G-BOARD	
I.C	
IC1201	B-7
Transistor	
Q1201	B-8
Q1202	C-8
Q1203	C-8
Q1204	B-8
Q1205	C-7
Q1206	B-7
Q1207	B-7
Q1208	B-8
Q1209	C-8
Q1210	D-8
Q1211	C-8
Q1212	C-8
Q1213	C-8
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Q1216	C-8
Q1217	D-7
Q1218	D-8
Q1219	B-7

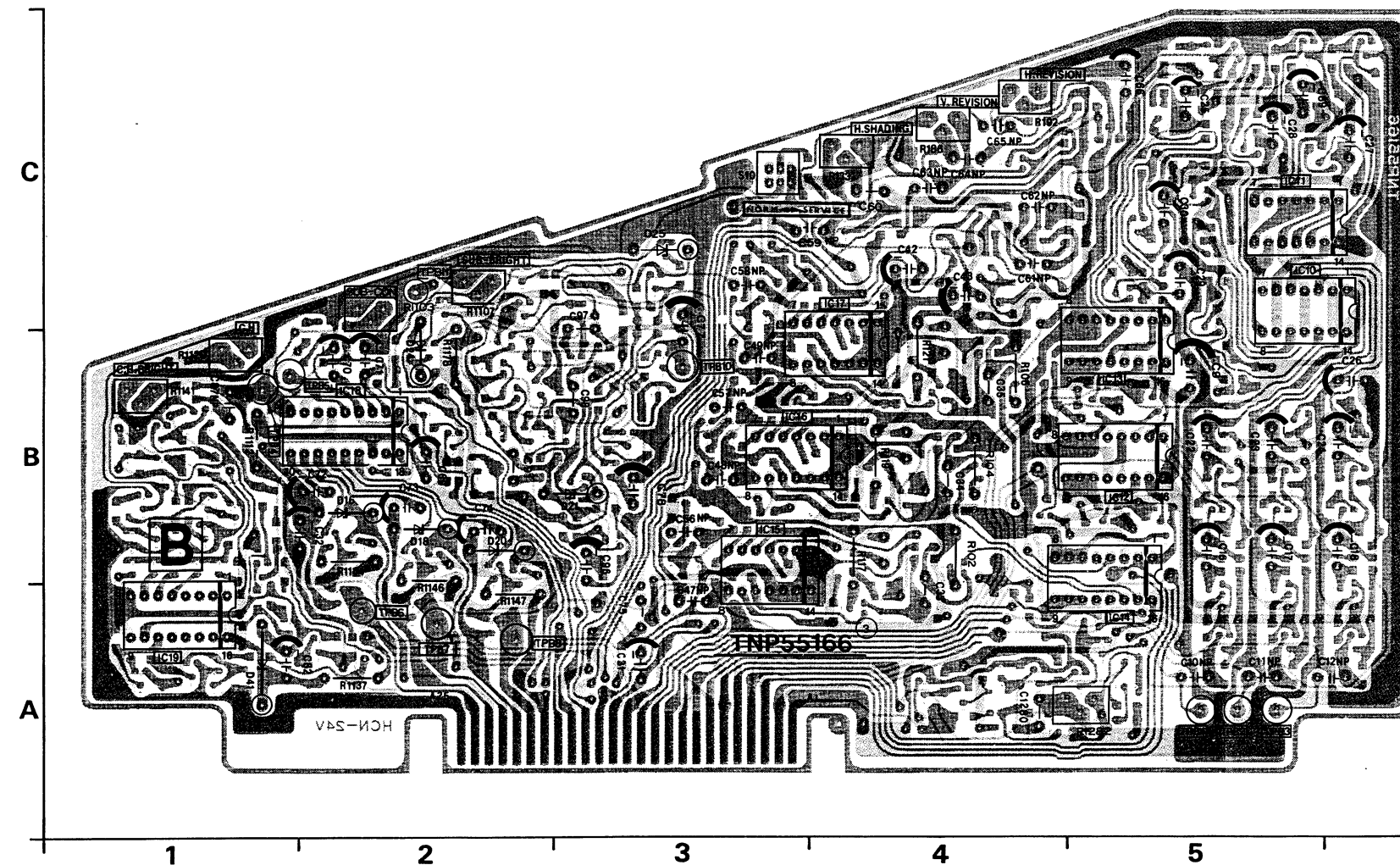
### ADDRESS INFORMATION



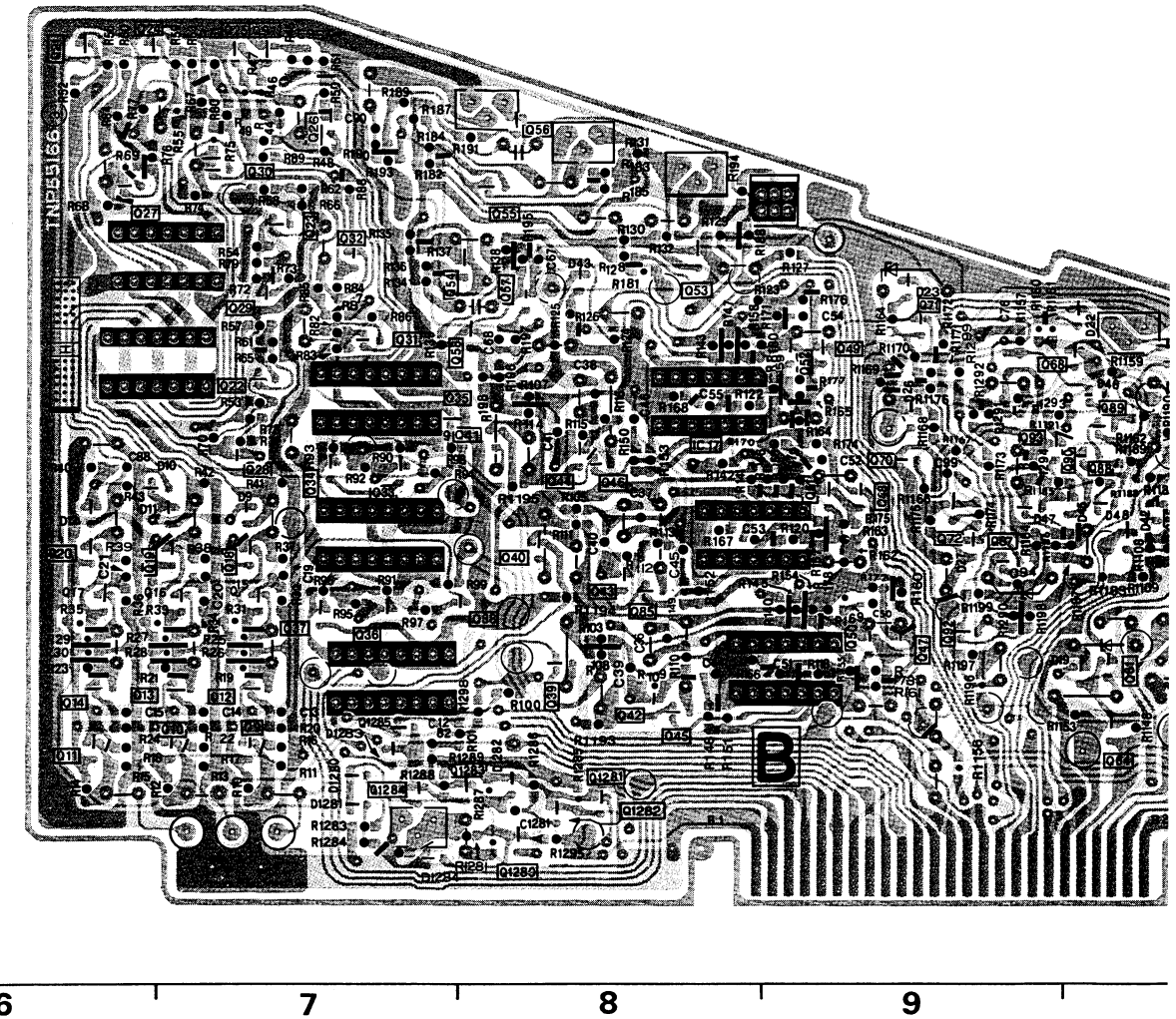
**T-BOARD TNP55168**



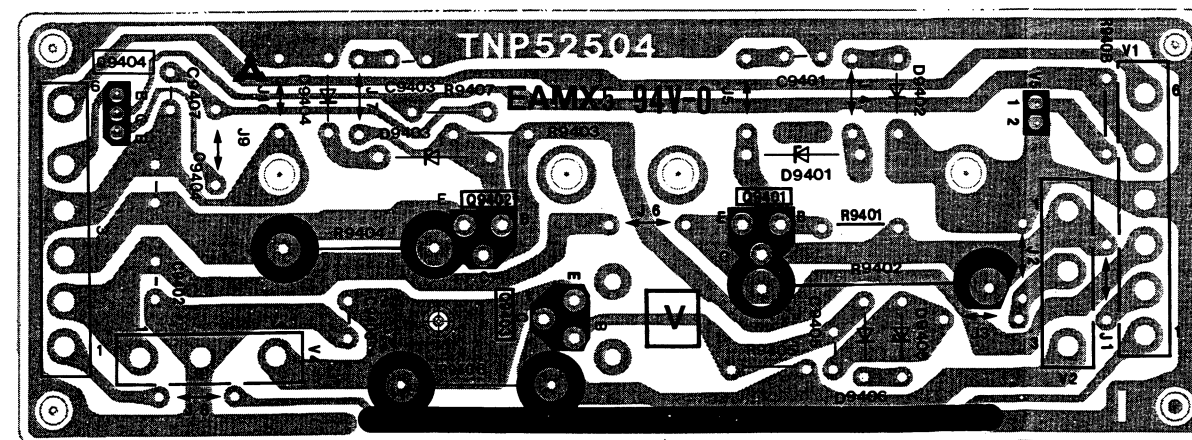
B-BOARD TNP55166  
(COMPONENT SIDE)



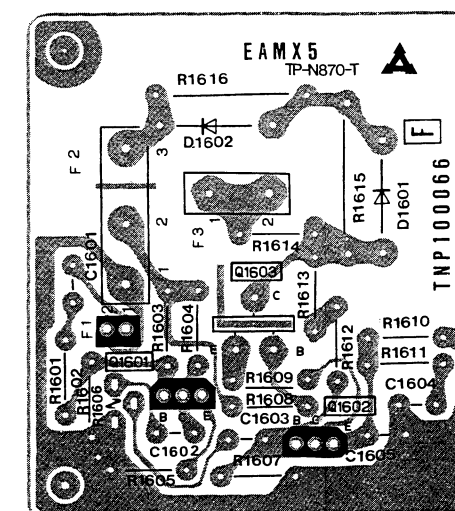
B-BOARD TNP55166  
(FOIL SIDE)



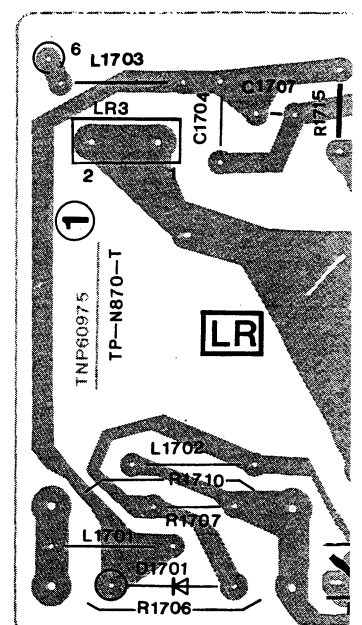
V-BOARD TNP52504AZ



F-BOARD TNP100066

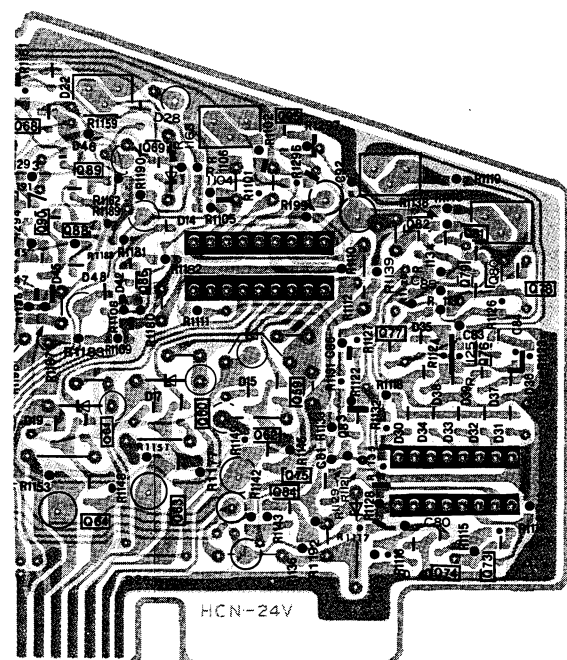


LR-BOARD



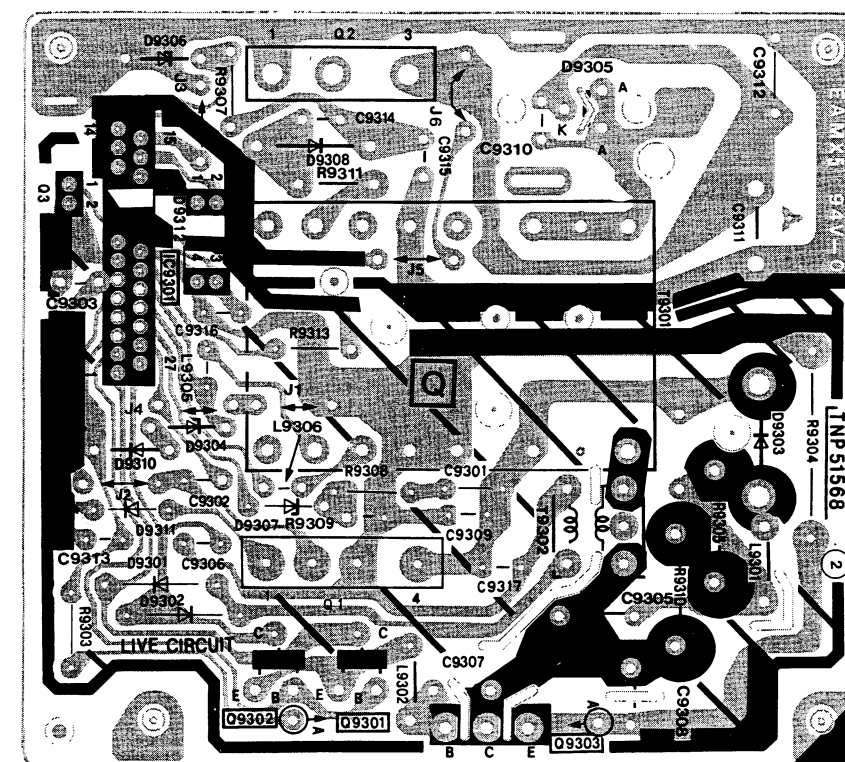
A 3D perspective diagram of a rectangular component with three terminals. Terminal C is on the top surface, terminal B is on the left side, and terminal E is on the bottom surface.

2SB709  
2SD601



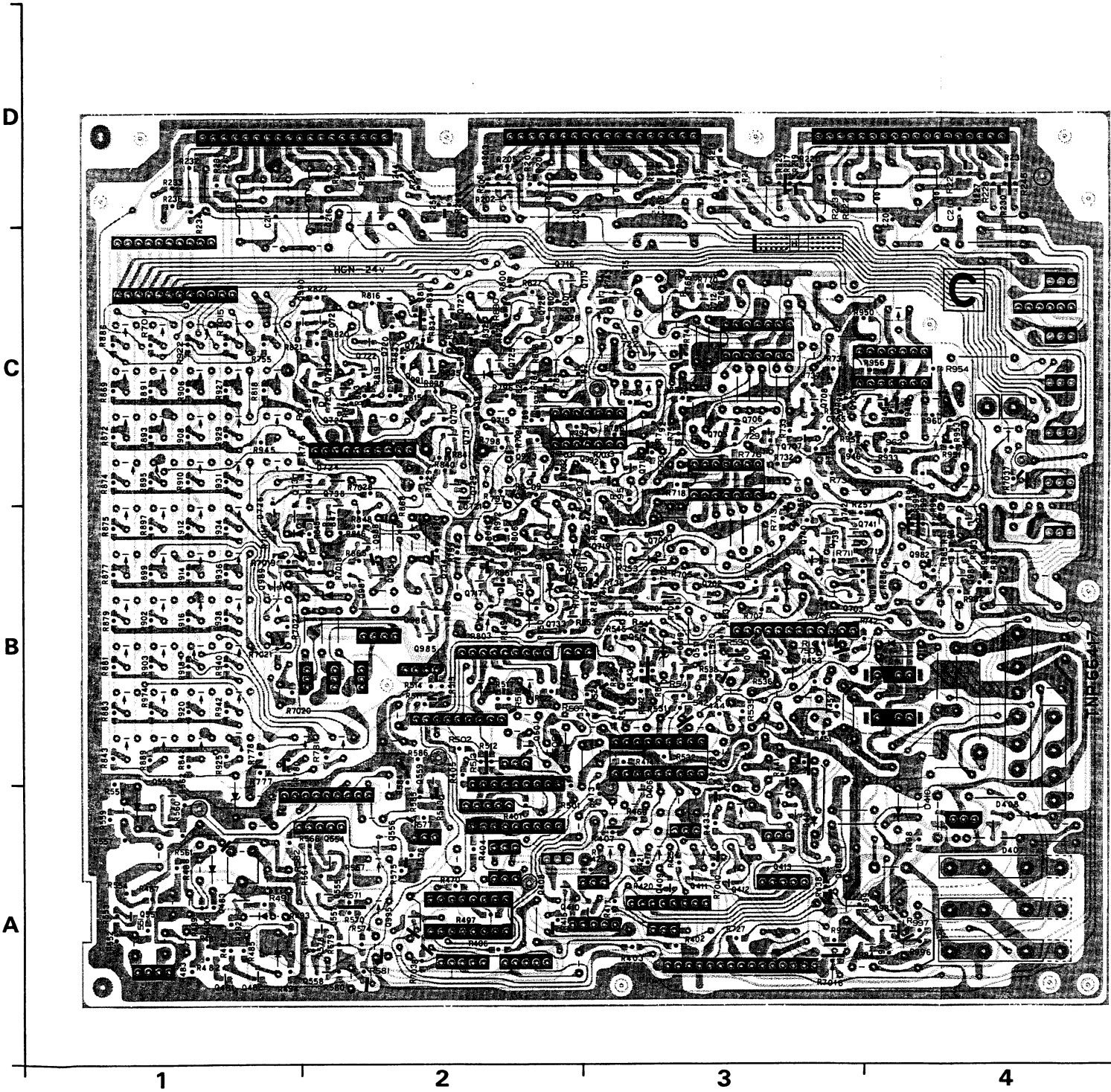
B-BOARD				
I.C		Q55		
IC10	C-5 (C)	Q56	C-8 (F)	
IC11	C-5 (C)	Q57	C-8 (F)	
IC12	B-5 (C)	Q58	C-8 (F)	
IC13	B-5 (C)	Q59	B-10 (F)	
IC14	A-5 (C)	Q60	A-10 (F)	
IC15	B-3 (C)	Q61	A-10 (F)	
IC16	B-3 (C)	Q62	A-10 (F)	
IC17	B-4 (C)	Q63	A-10 (F)	
IC18	B-2 (C)	Q64	A-10 (F)	
IC19	A-2 (C)	Q68	C-9 (F)	
		Q69	B-10 (F)	
Transistor		Q70	B-9 (F)	
Q9	A-7 (F)	Q71	C-9 (F)	
Q10	A-7 (F)	Q72	B-9 (F)	
Q11	A-6 (F)	Q73	A-11 (F)	
Q12	A-7 (F)	Q74	A-11 (F)	
Q13	B-6 (F)	Q75	A-10 (F)	
Q14	B-6 (F)	Q76	B-11 (F)	
Q15	B-7 (F)	Q77	B-11 (F)	
Q16	B-6 (F)	Q78	B-11 (F)	
Q17	B-6 (F)	Q79	B-11 (F)	
Q18	B-7 (F)	Q80	B-11 (F)	
Q19	B-7 (F)	Q81	B-11 (F)	
Q20	B-6 (F)	Q82	B-11 (F)	
Q21	C-6 (F)	Q83	A-11 (F)	
Q22	C-7 (F)	Q84	A-10 (F)	
Q23	C-7 (F)	Q85	B-8 (F)	
Q24	C-7 (F)	Q86	B-10 (F)	
Q25	C-7 (F)	Q87	B-9 (F)	
Q26	C-7 (F)	Q88	B-10 (F)	
Q27	C-7 (F)	Q89	B-10 (F)	
Q28	B-7 (F)	Q90	B-9 (F)	
Q29	C-7 (F)	Q91	C-7 (F)	
Q30	C-7 (F)	Q92	B-9 (F)	
Q31	C-7 (F)	Q93	B-9 (F)	
Q32	C-7 (F)	Q95	B-10 (F)	
Q33	B-7 (F)	VR		
Q34	B-7 (F)	R133	C-4 (C)	
Q35	B-8 (F)	R186	C-4 (C)	
Q36	B-7 (F)	R192	C-4 (C)	
Q37	B-7 (F)	R1103	C-2 (C)	
Q38	B-8 (F)	R1107	C-2 (C)	
Q39	B-8 (F)	R1120	B-1 (C)	
Q40	B-8 (F)	R1141	B-1 (C)	
Q41	B-8 (F)			
Q42	A-8 (F)	Test Point		
Q43	B-8 (F)	TPB1	A-5 (C)	
Q44	B-8 (F)	TPB2	A-5 (C)	
Q45	A-8 (F)	TPB3	A-5 (C)	
Q46	B-8 (F)	TPB4	B-1 (C)	
Q47	B-9 (F)	TPB5	B-2 (C)	
Q48	B-9 (F)	TPB6	A-2 (C)	
Q49	C-9 (F)	TPB7	A-2 (C)	
Q50	B-9 (F)	TPB8	A-2 (C)	
Q51	B-9 (F)	TPB10	B-3 (C)	
Q52	C-9 (F)	TPB11	C-2 (C)	
Q53	C-8 (F)			
Q54	C-7 (F)			

ADDRESS INFORMATION  
 (C) ... COMPONENT SIDE  
 (F) ... FOIL SIDE

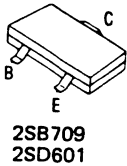
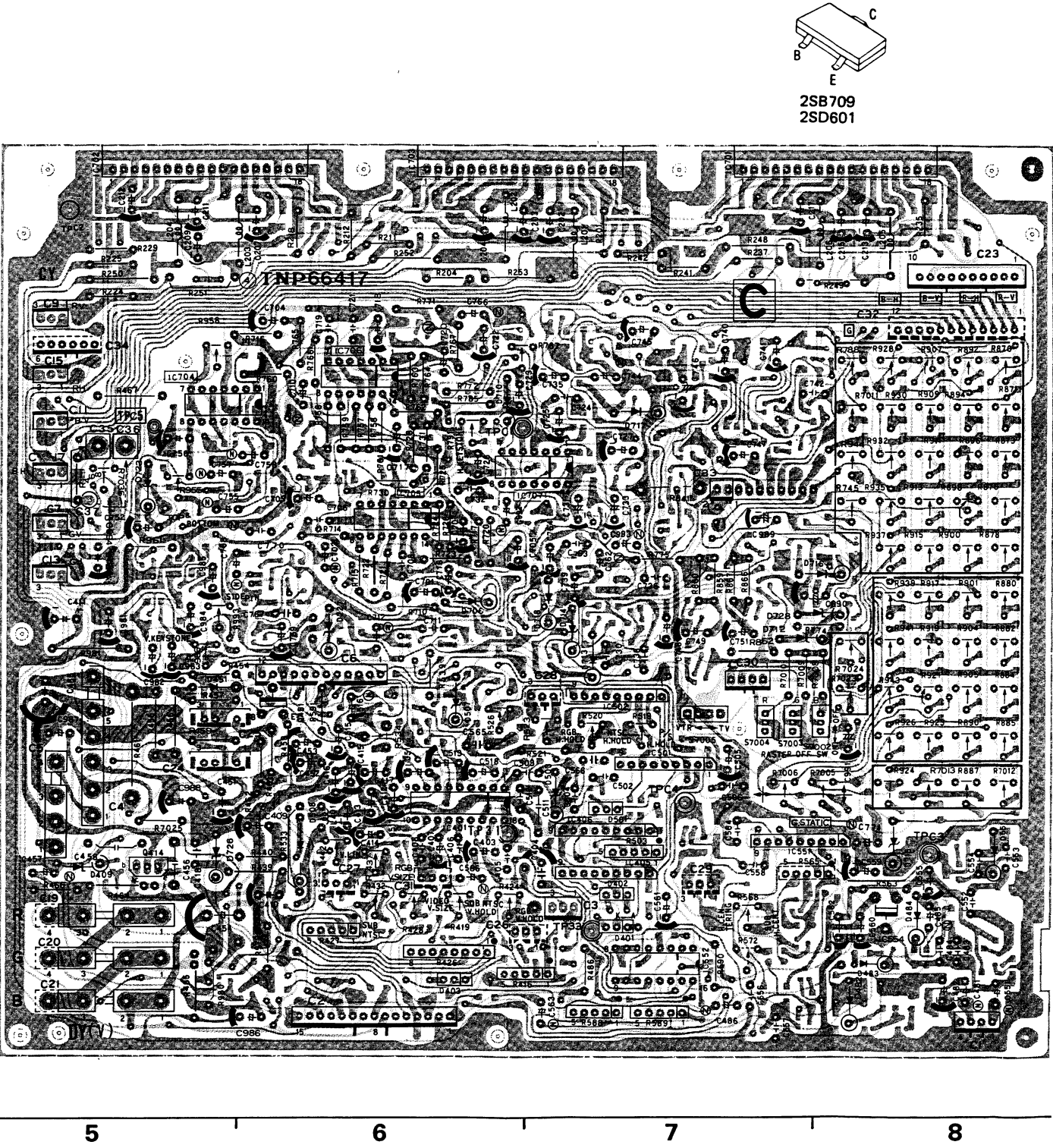




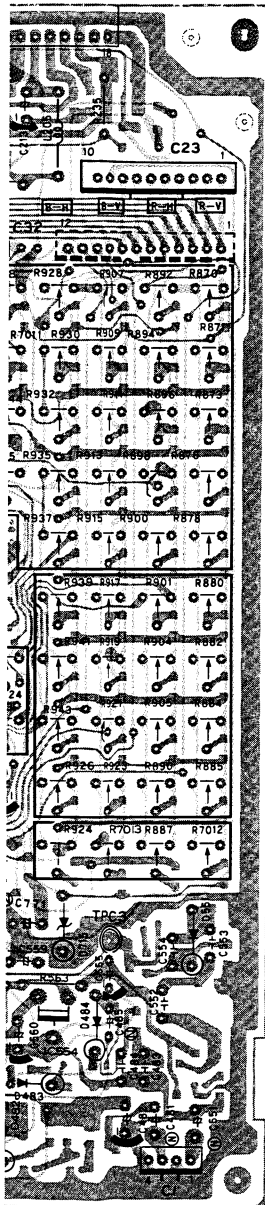
C-BOARD TNP66417AZ  
(FOIL SIDE)



C-BOARD TNP66417AZ  
(COMPONENT SIDE)

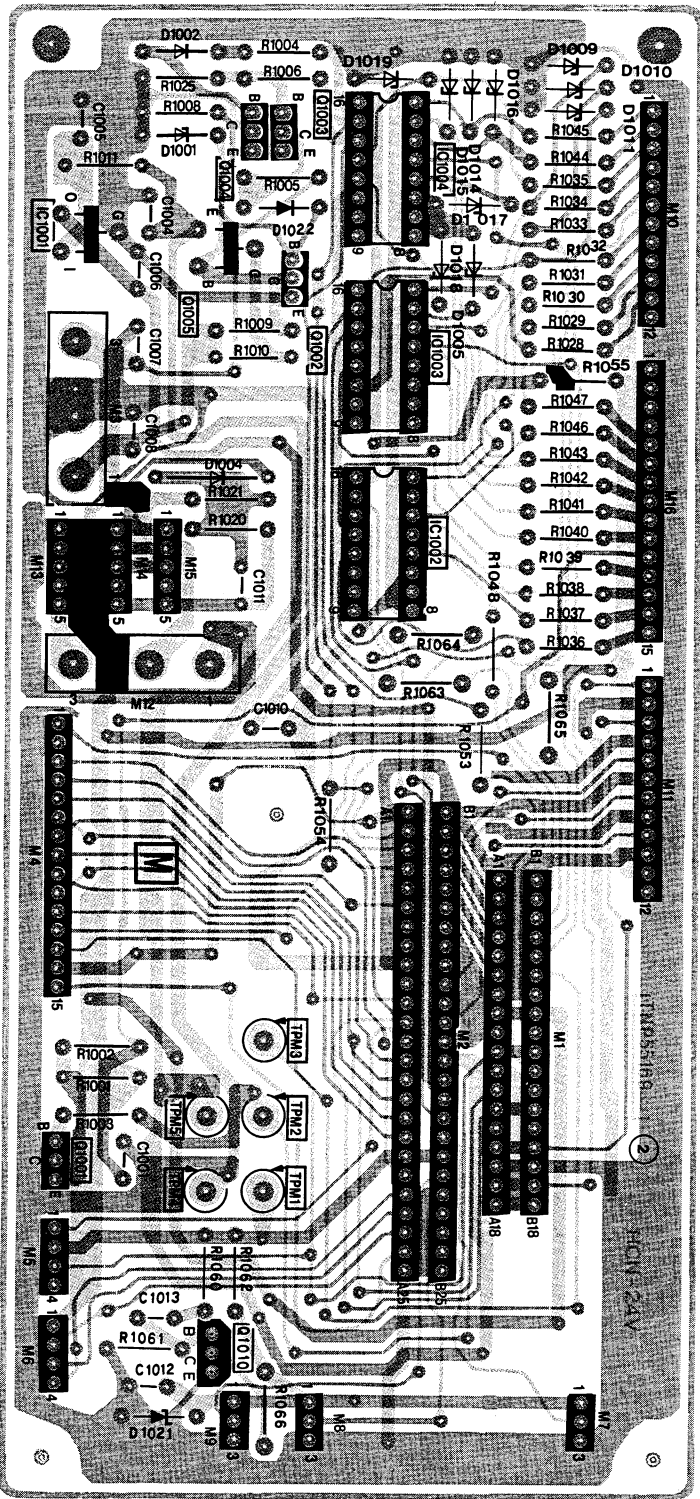


C



C-BOARD									
I.C		Q726		C-2		R880		B-8	
IC401	B-6	Q727	C-2	Q728	C-2	R882	B-8	Q1003	
IC405	A-7	Q729	C-2	Q730	B-2	R884	B-8	Q1004	IC1004
IC406	A-7	Q731	C-2	Q732	B-2	R885	B-8		IC1001
IC501	B-7	Q733	C-2	Q734	B-2	R887	B-8	Q1005	
IC502	B-7	Q735	C-2	Q736	B-2	R890	B-8	Q1002	IC1003
IC551	A-7	Q737	C-2	Q738	C-4	R892	C-8		
IC552	A-7	Q739	C-2	Q740	B-3	R894	C-8		
IC554	A-6	Q741	B-3	Q742	B-4	R896	C-8		
IC704	C-6	Q981	B-4	Q982	B-4	R898	C-8		
IC705	C-6	Q983	A-4	Q984	A-3	R900	C-8		
IC706	C-6	Q985	B-2	Q986	B-2	R901	B-8		
IC707	C-6	Q987	B-2	Q988	B-2	R904	B-8		
Transistor		VR		Test Point					
Q408	A-2	R419	A-6	TPC1	C-7				
Q409	A-3	R424	A-6	TPC2	C-5				
Q410	A-1	R428	A-6	TPC3	A-8				
Q411	A-3	R432	A-6	TPC4	A-7				
Q412	A-3	R437	A-6	TP31	A-6				
Q413	A-3	R442	A-6	TP33	A-7				
Q414	A-5	R519	B-7						
Q451	B-6	R520	B-7						
Q481	A-1	R523	B-6						
Q482	A-1	R534	A-7						
Q483	A-1	R568	C-8						
Q510	B-3	R745	C-8						
Q511	B-3	R787	C-6						
Q512	B-3	R788	C-8						
Q551	A-1	R791	C-6						
Q553	A-1	R870	C-8						
Q559	B-2	R871	C-8						
Q701	B-3	R876	C-8						
Q702	B-3	R878	C-8						
Q703	B-4								
Q705	C-3								
Q706	C-3								
Q707	C-3								
Q708	C-3								
Q709	B-3								
Q712	C-3								
Q713	C-3								
Q714	C-3								
Q715	C-2								
Q716	C-2								
Q717	B-2								
Q718	B-3								
Q719	B-3								
Q720	C-2								
Q721	C-2								
Q722	C-2								
Q723	C-2								
Q724	C-2								
Q725	C-2								

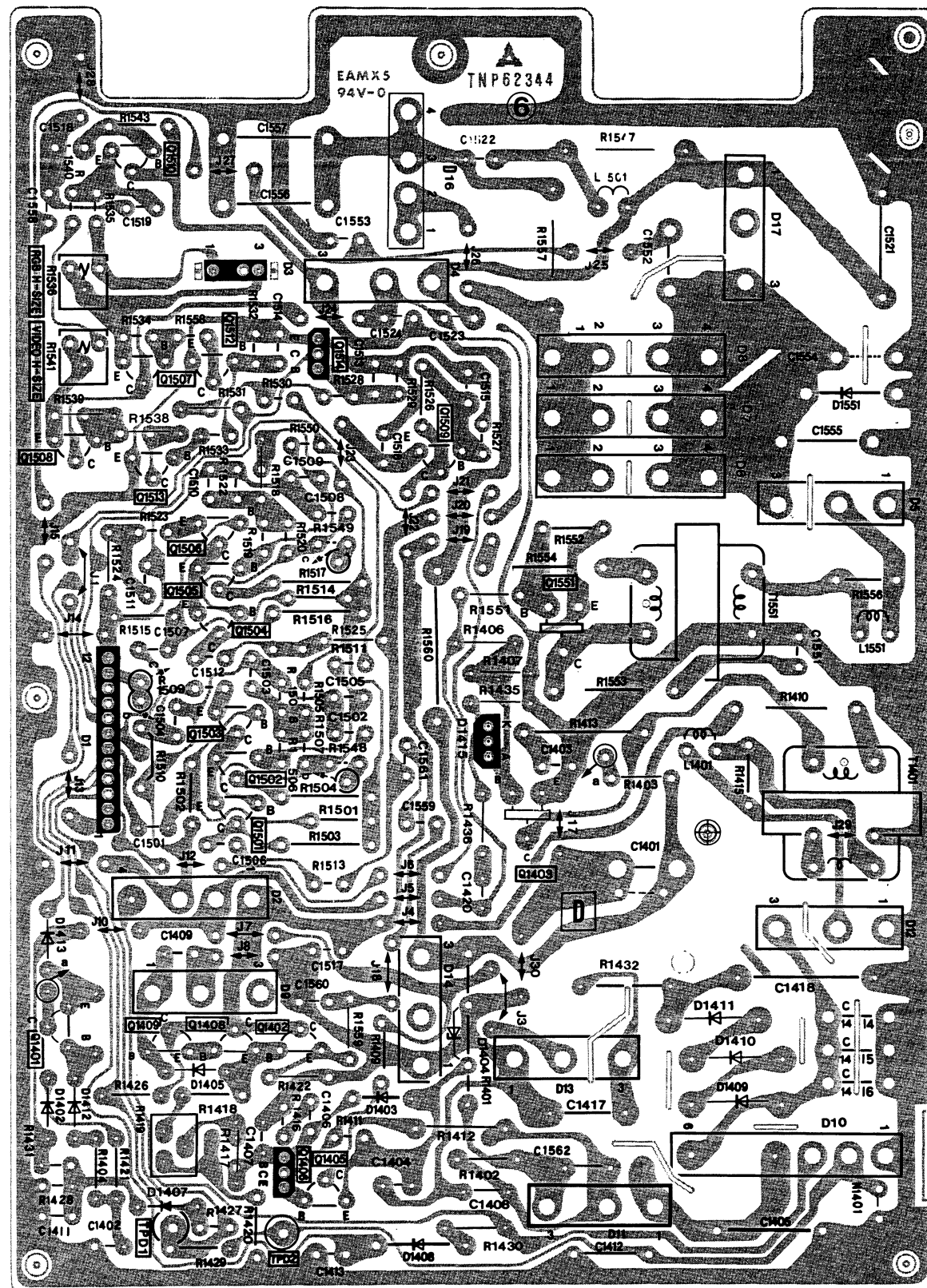
ADDRESS INFORMATION  
© ... COMPONENT SIDE  
Ⓢ ... FOIL SIDE



Test Point	Transistor	I.C.
	Q1003	
	Q1004	IC1004
		IC1001
	Q1005	
	Q1002	IC1003
		IC1002
TPM3		
TPM5 TPM2		
TPM4 TPM1	Q1001	
	Q1010	

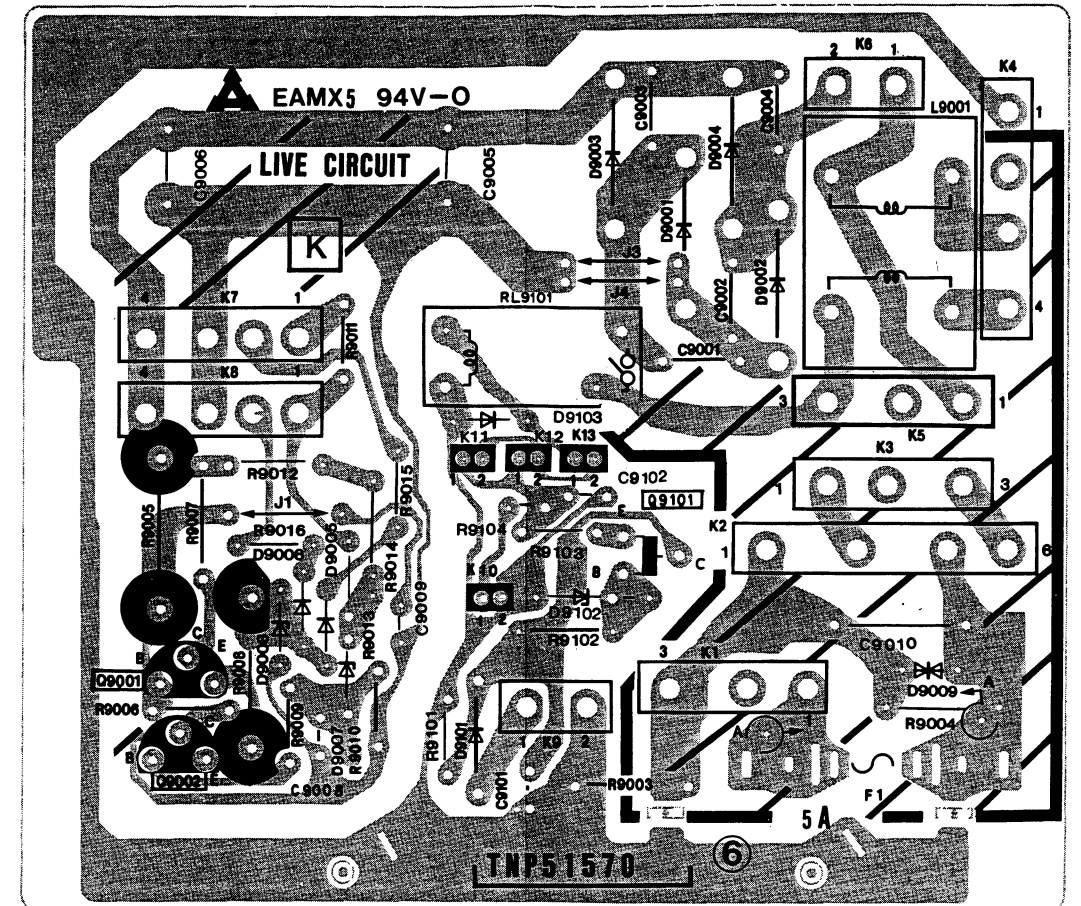


D-BOARD TNP62344Z

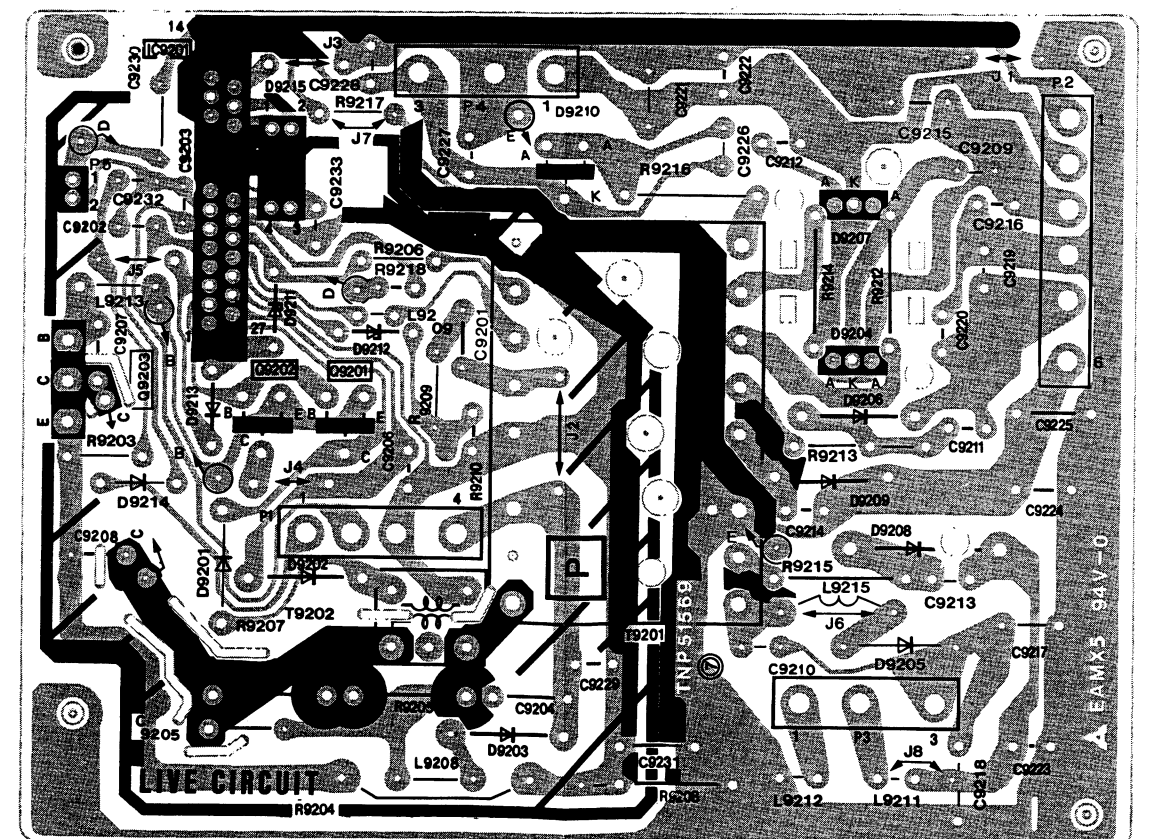


Test Point	VR	Transistor
		Q1510
	R1536	
	R1541	Q1512 Q1514 Q1507 Q1509 Q1508 Q1513 Q1506 Q1505 Q1551 Q1504  Q1503 Q1502 Q1403 Q1501  Q1409 Q1402 Q1401 Q1408  Q1406 Q1405
TPD1		
TPD2		

K-BOARD TNP51570BZ



P-BOARD TNP51569BZ



# SCHEMATIC DIAGRAM FOR MODEL PT-102N/GN/AN/SN (CHASSIS NO. Q5)

## Important safety notice

Components identified by  $\Delta$  mark have special characteristics important for safety.  
When replacing any of these components, use only manufacturer's specified parts.

### NOTE:

#### 1. RESISTOR

All resistors are carbon 1/4W resistor, unless otherwise noted the following marks.  
Unit of resistance is OHM ( $\Omega$ ), (K = 1,000, M = 1,000,000).

- |   |                                    |
|---|------------------------------------|
| $\Delta$ : Solid                            | $\otimes$ : Fuse                   |
| $\square$ : Wire Wound                      | $\bullet$ : Metal Oxide            |
| $\textcircled{F}$ : Non-Flammable           | $\textcircled{L}$ : Lead Less Type |
| $\textcircled{\text{C}}$ : Fixed Metal Film |                                    |

#### 2. CAPACITOR

All capacitors are ceramic 50V capacitor, unless otherwise noted the following marks.  
Unit of capacitance is  $\mu\text{F}$ , unless otherwise noted.

- |                              |   |
|------------------------------|---|
| $\text{H}$ : Electrolytic    | $\textcircled{\text{C}}$ : Titanium Oxide |
| $\text{NP}$ : Bipolar        | $\bullet$ : Temperature Compensation      |
| $\text{Z}$ : Z Type          | $\text{M}$ : Polyester                    |
| $\text{T}$ : Dipped Tantalum | $\text{PP}$ : Polypropylene               |
| $\text{TF}$ : TF Type        | $\text{MP}$ : Metalized Polyester         |

#### 3. COIL

Unit of inductance is  $\mu\text{H}$ .

#### 4. TEST POINT

$\nabla$  : Test point position

#### 5. VOLTAGE MEASUREMENT

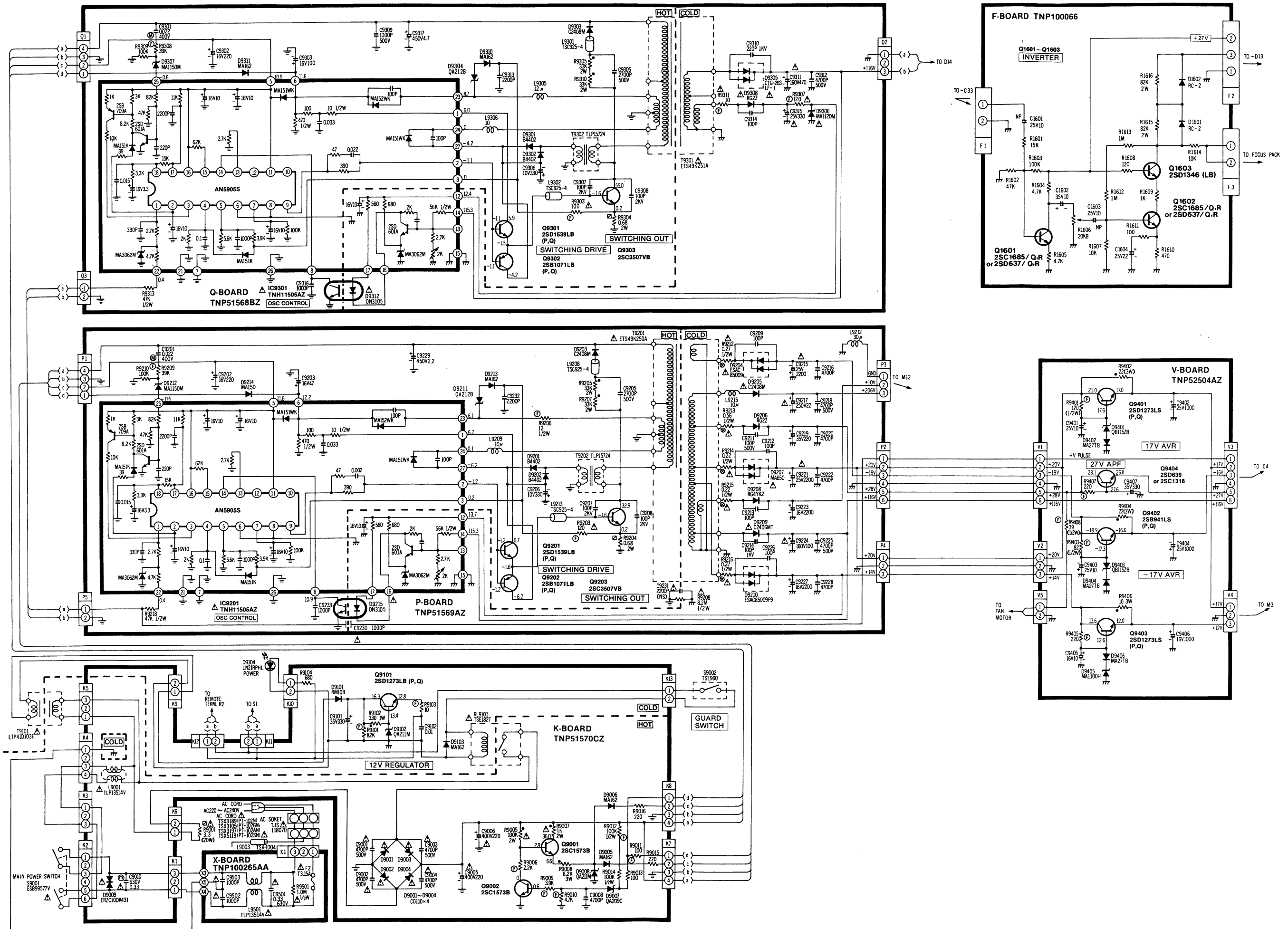
Voltage is measured by a VTVM receiving colour bar signal, when all customer's controls are set to the maximum position.

6. When arrow mark ( $\nearrow$ ) is found, connection is easily found along with the direction of an arrow.
7. When schematic diagram of a board is described in more than two places, they are encircled with dotted line.....
8.  $\longrightarrow$  Video Signal  
 $\longrightarrow$  R, G, B Signal  
 $\square\square\square\square$  H/V, H, V Pulse
9. This schematic diagram is the latest at the time of printing and subject to change without notice.

## WAVEFORM PATTERN TABLE

①  16Vp-p 20μsec.	⑨  0.68Vp-p 20μsec.	⑮ PAL  0.1Vp-p 2msec.	⑳  0.7Vp-p 5msec.	⑳  13Vp-p 20μsec.
②  13Vp-p 20μsec.	⑩  1.2Vp-p 20μsec.	⑯ SECAM  0.32Vp-p 2msec.	㉔  10Vp-p 5msec.	㉔  900Vp-p 20μsec.
③  15Vp-p 20μsec.	⑪  0.7Vp-p 20μsec.	⑰  2.3Vp-p 20μsec.	㉕  3Vp-p 5msec.	㉕  170Vp-p 20μsec.
④  1.3Vp-p 20μsec.	⑫  0.18Vp-p 20μsec.	⑱  0.9Vp-p 20μsec.	㉖  18.5Vp-p 20μsec.	㉖  4.8Vp-p 20μsec.
⑤  60mVp-p 50μsec.	⑬  1.4Vp-p 20μsec.	⑲  2.1Vp-p 20μsec.	㉗  6.2Vp-p 20μsec.	㉗  2.8Vp-p 20μsec.
⑥  60mVp-p 50μsec.	⑭  160mVp-p 20μsec.	⑳  40mVp-p 5msec.	㉘  900Vp-p 20μsec.	㉘  4.8Vp-p 20μsec.
⑦  1.25Vp-p 20μsec.	⑮ PAL  1.5Vp-p 5msec.	㉑  40mVp-p 5msec.	㉙  4.1Vp-p 20μsec.	㉙  50mVp-p 5msec.
⑧  0.3Vp-p 20μsec.	⑯ SECAM  1.7Vp-p 5msec.	㉒  1.8Vp-p 20μsec.	㉚  7Vp-p 20μsec.	

## F/K/P/Q/V/X-B-BOARD Section



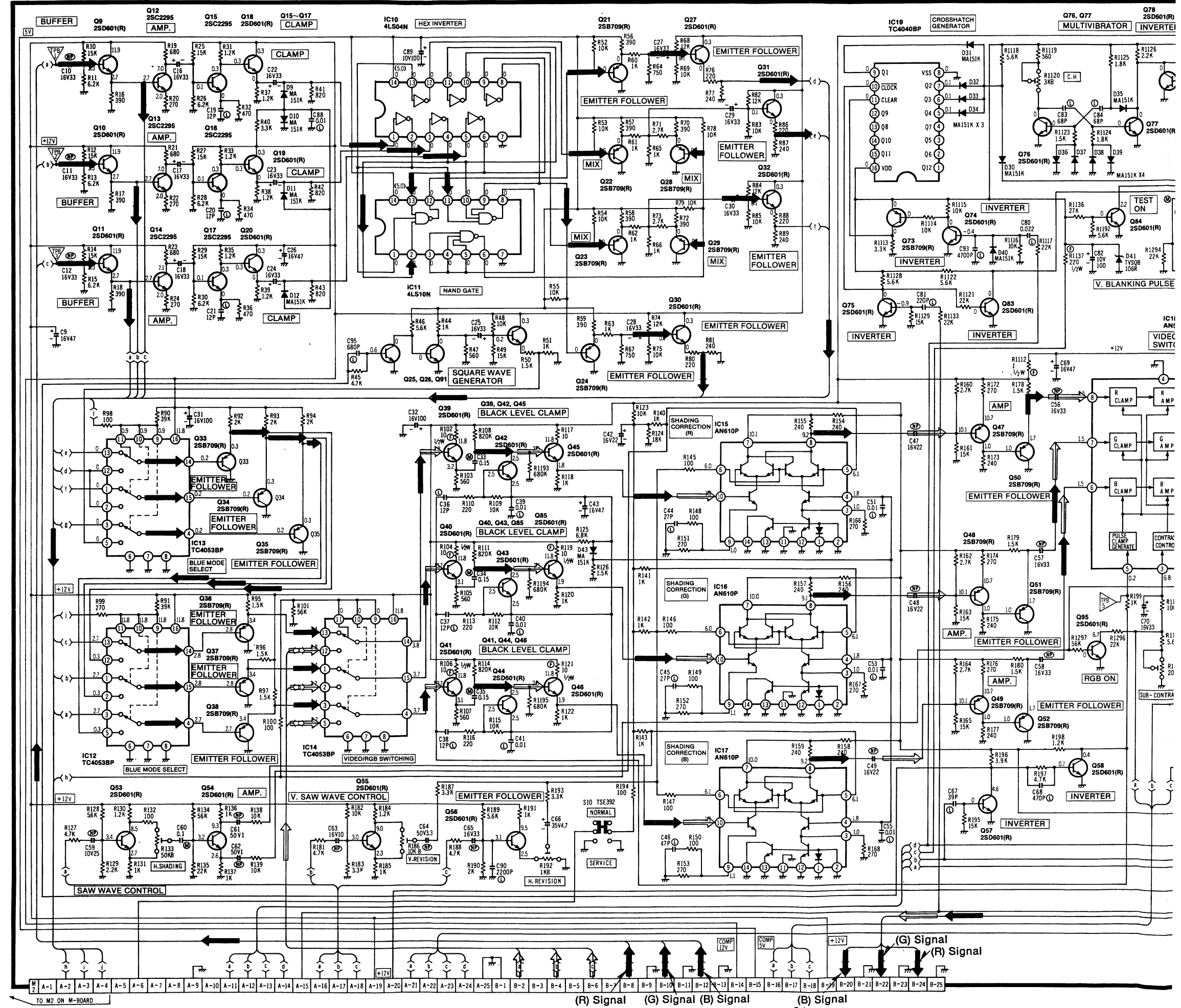
## M-BOARD Section

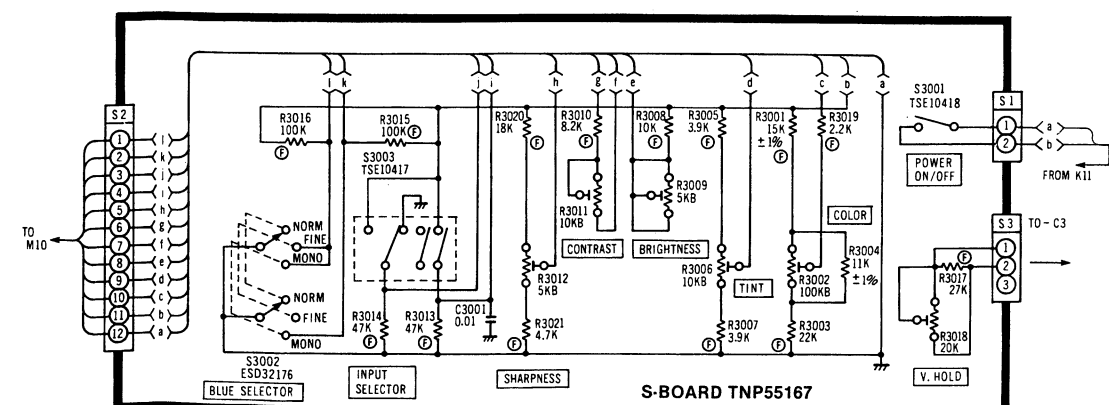
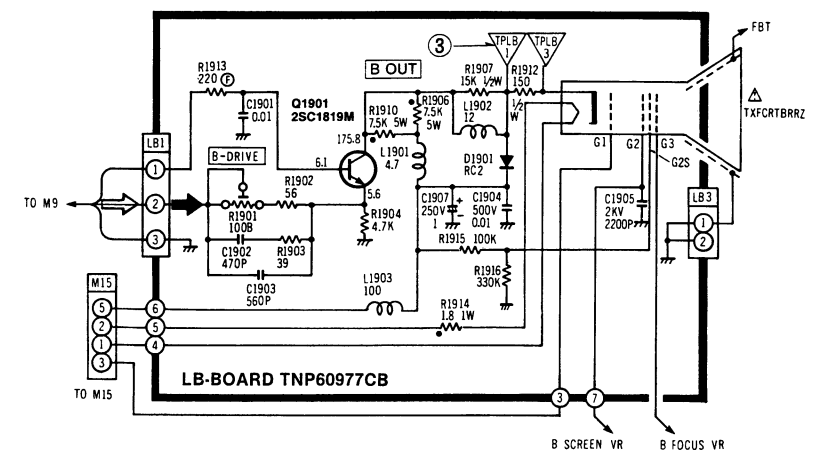
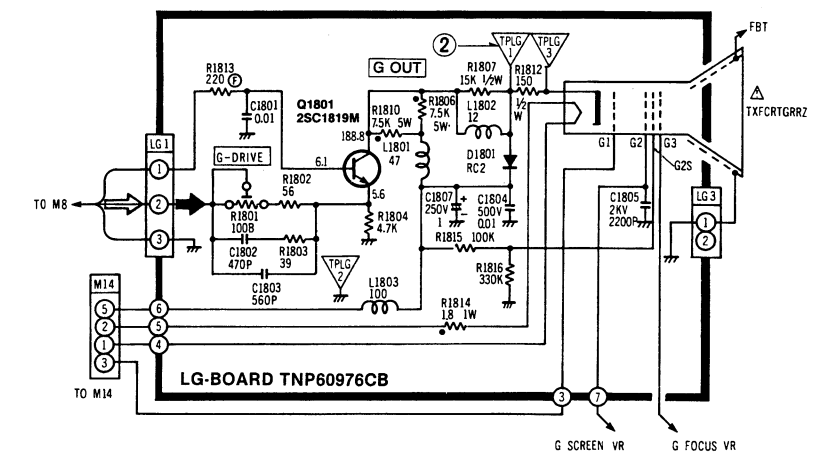
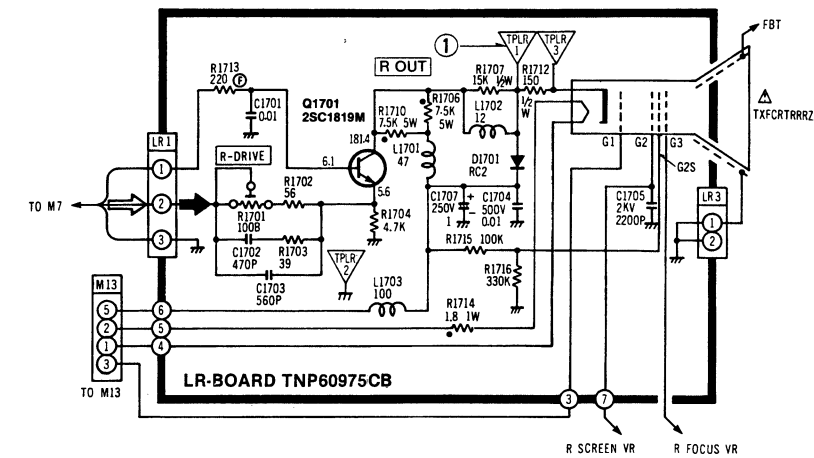
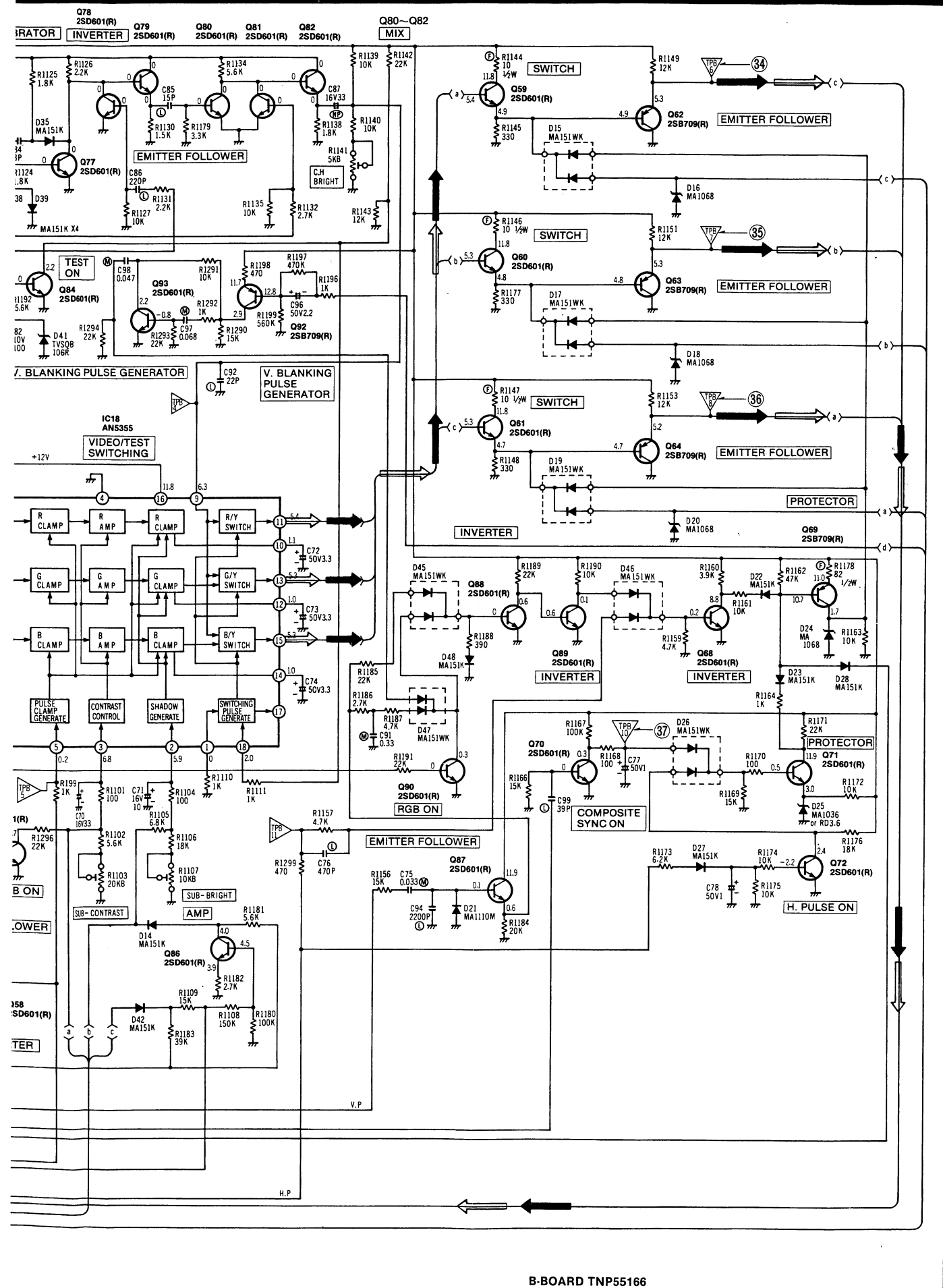


# B/S/LR/LG/LB-BOARD Section

Video Signal

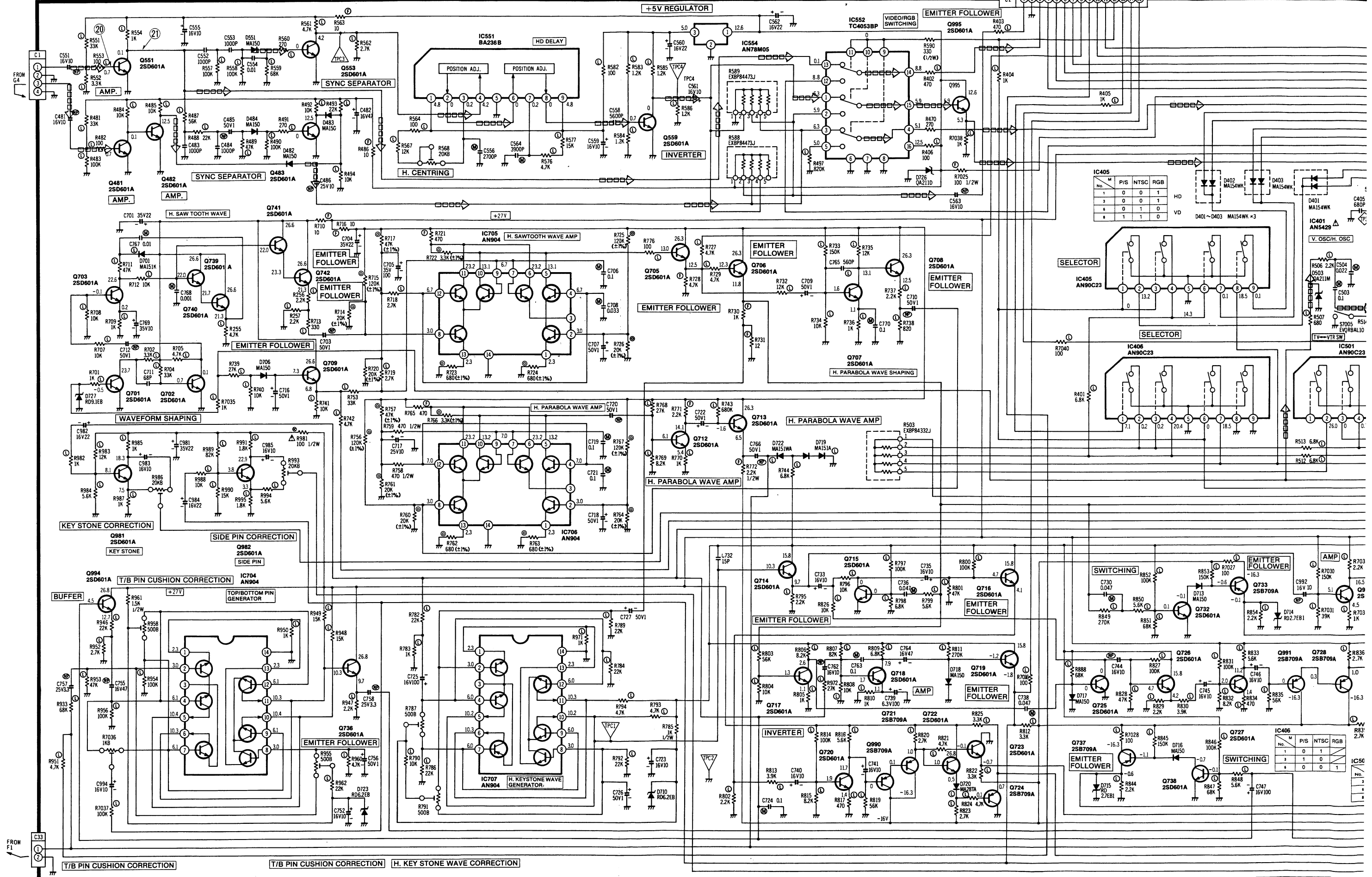
R · G · B Signal



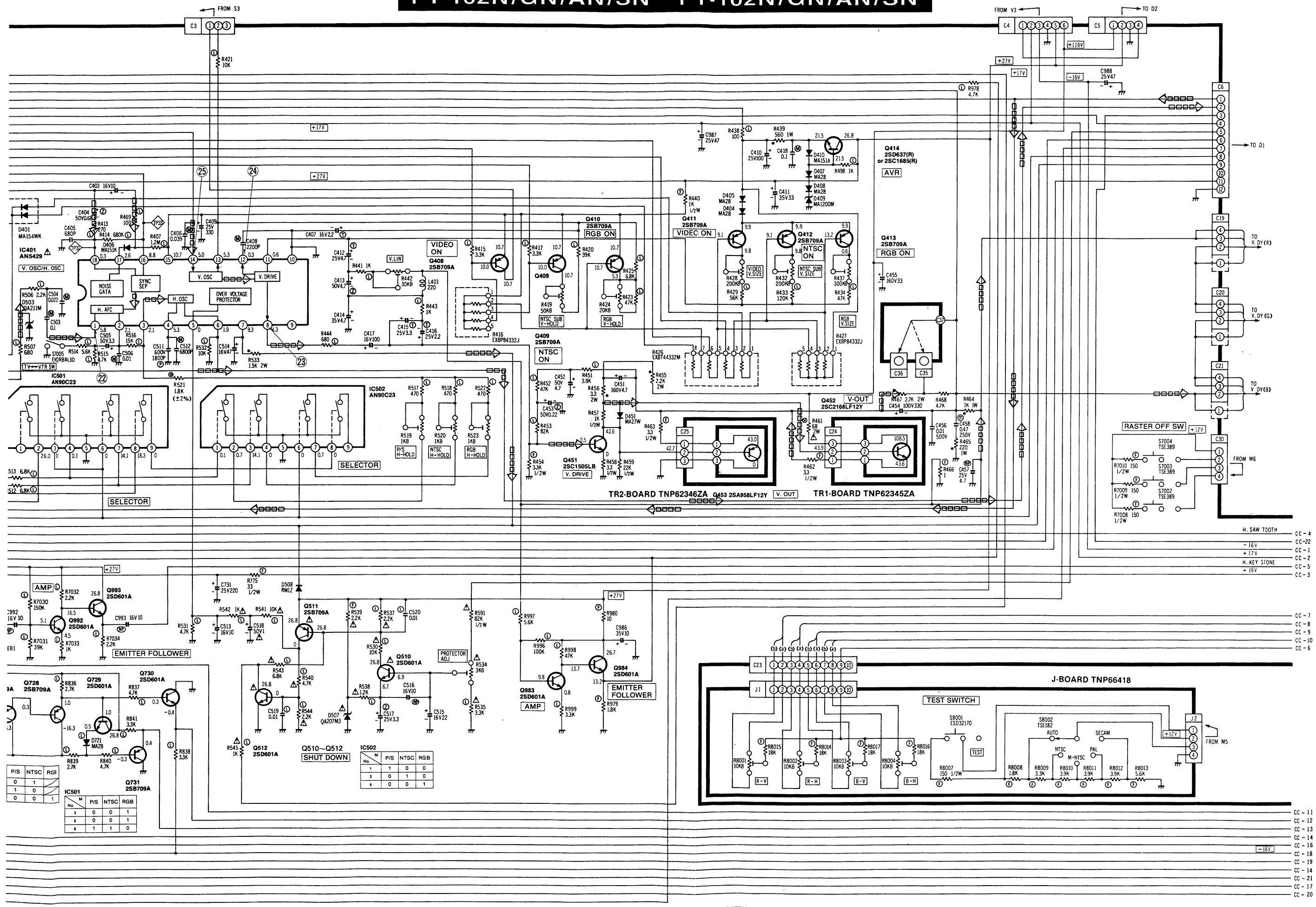


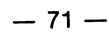
C-BOARD TNP66417

FROM M4 H/V, H, V Pulse

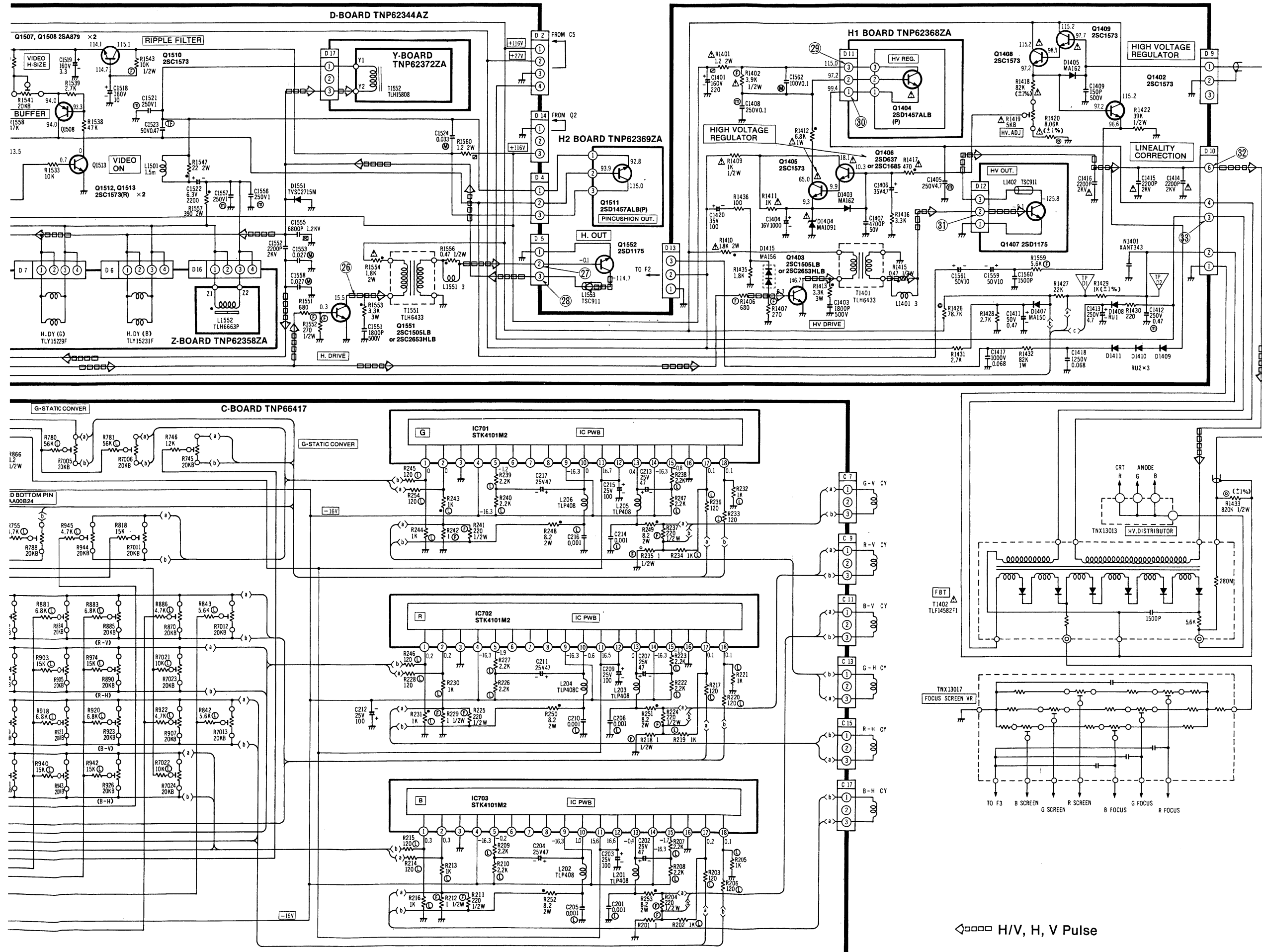


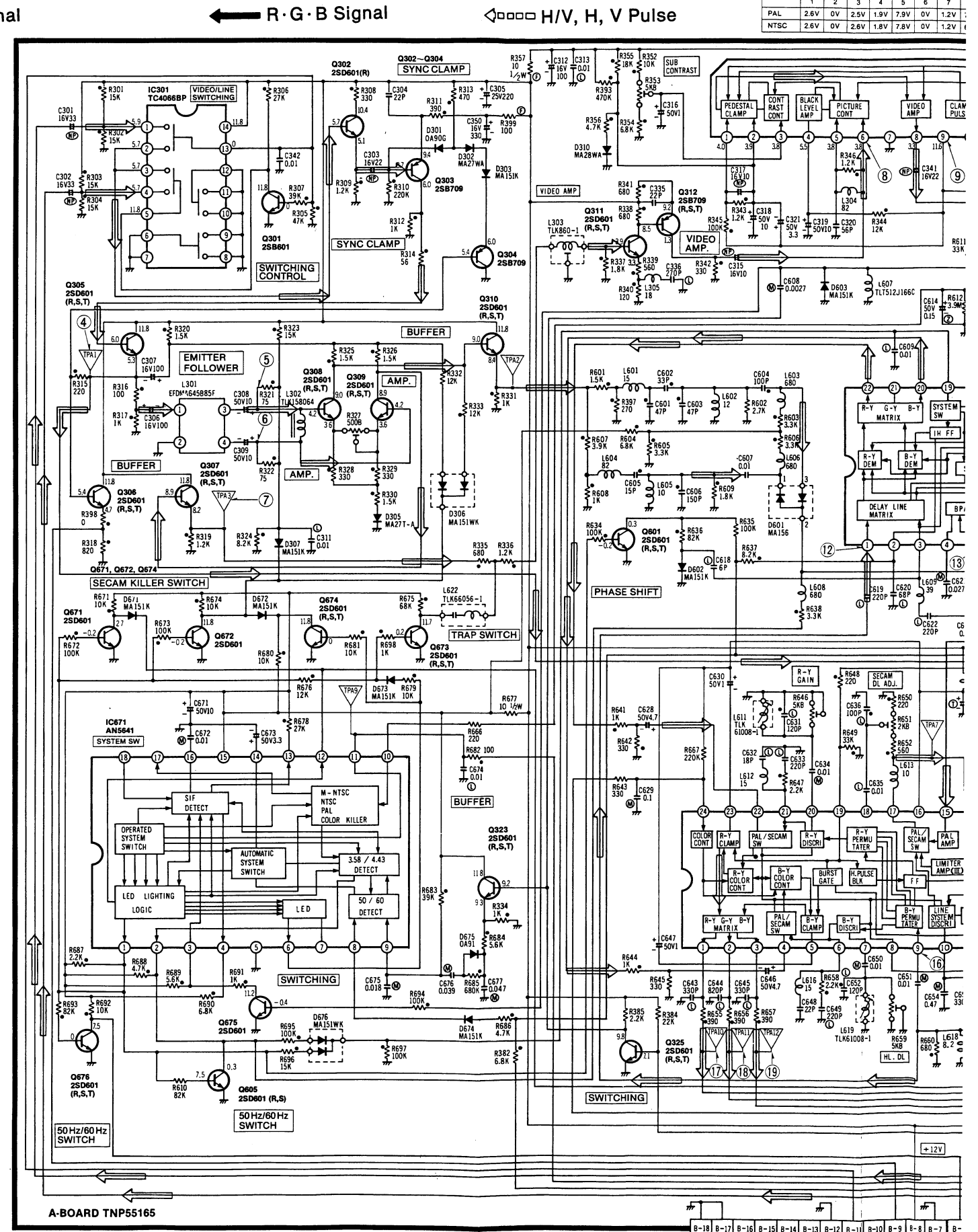
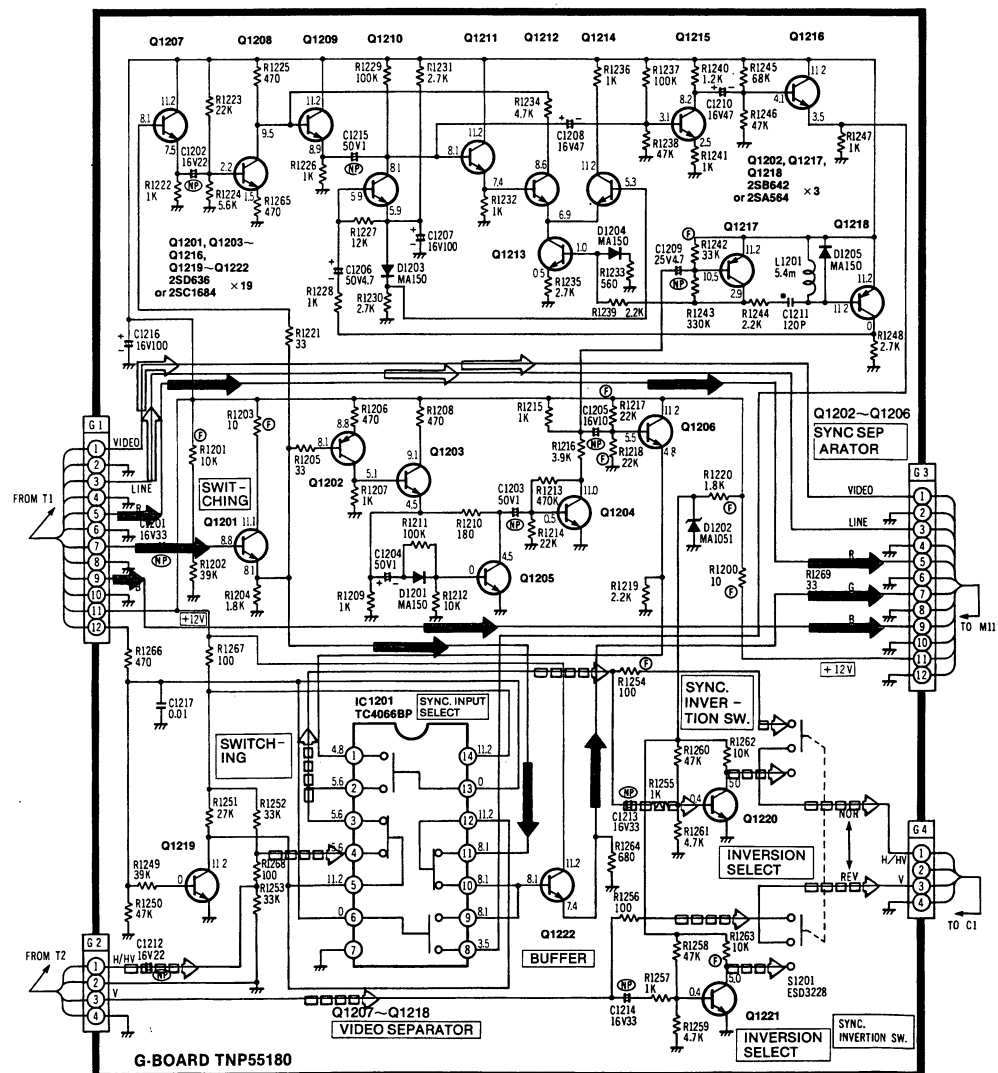
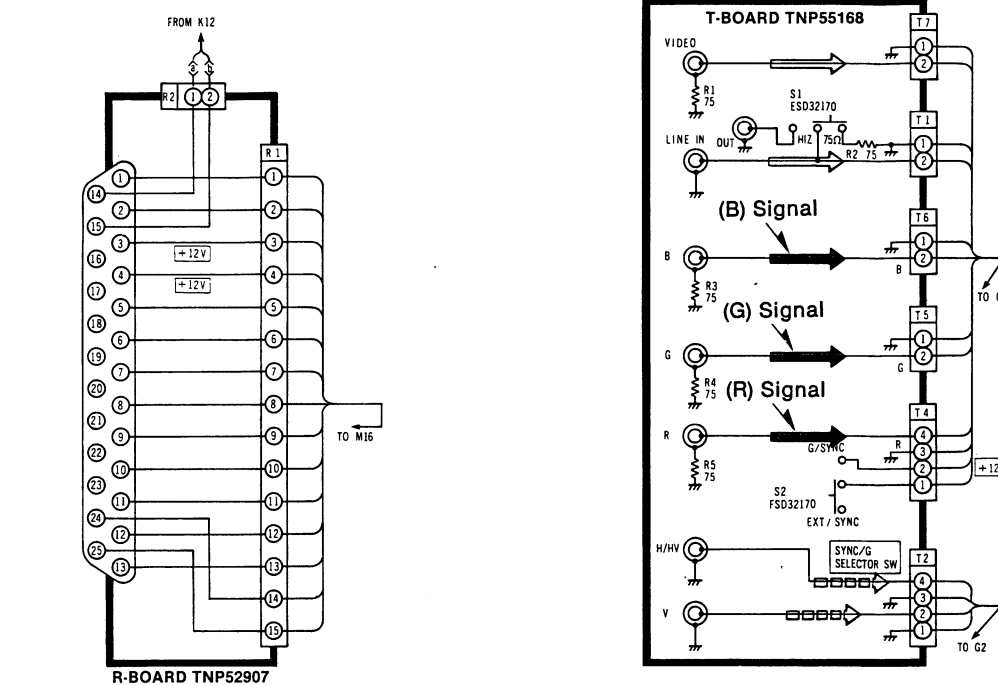
## PT-102N/GN/AN/SN PT-102N/GN/AN/SN











IC671	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
SECAM	7.6V	0.3V	11.6V	11.8V	0V	0.2V	11.7V	0.2V	11.9V	7.4V	11.2V	0.1V	11.8V	6.6V	11.8V	5.1V	2.7V	3.3V
PAL	7.6V	0.3V	11.6V	11.8V	0V	0.2V	0V	0.2V	11.9V	9.4V	11.2V	0V	11.8V	6.6V	11.8V	5.1V	0V	3.3V
NTSC	0.2V	9.1V	11.6V	11.8V	0V	0V	1.2V	0.2V	11.9V	9.4V	11.2V	1.5V	11.8V	11.6V	11.8V	5.1V	0V	3.3V

	1	2	3	4	5	6	7	8	9	10	11	12
SECAM	6.7V	6.9V	7.1V	4.8V	10.2V	4.8V	3.2V	0.1V	3.2V	3.3V	0V	3.3V
PAL	7.0V	7.0V	6.4V	4.8V	10.2V	4.7V	3.2V	1.1V	2.5V	7.5V	0V	3.3V

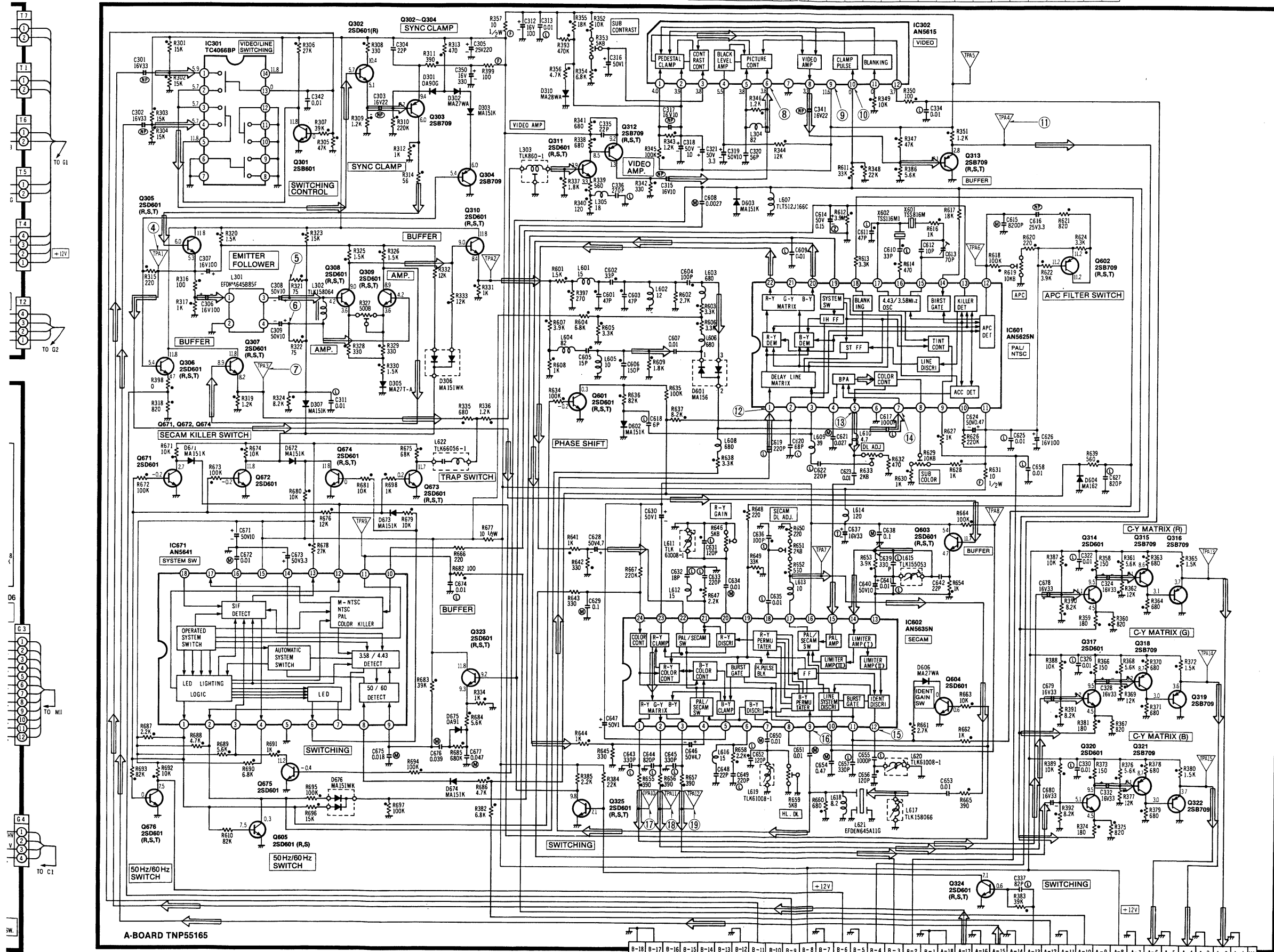
# PT-102N/GN/AN/SN PT-102N/GN/AN/SN

Video Signal

R · G · B Signal

H/V, H, V Pulse

IC801	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22
PAL	2.6V	0V	2.5V	1.9V	7.3V	0V	1.2V	7.0V	6.4V	8.6V	11.2V	7.8V	9.4V	0V	11.2V	7.6V	3.1V	0V	6.1V	5.2V	7.0V	6.4V
NTSC	2.6V	0V	2.6V	1.8V	7.3V	0V	1.2V	6.9V	6.4V	8.6V	11.2V	7.9V	9.4V	-0.1V	9.2V	11.2V	3.1V	0V	3.6V	6.4V	6.7V	6.2V



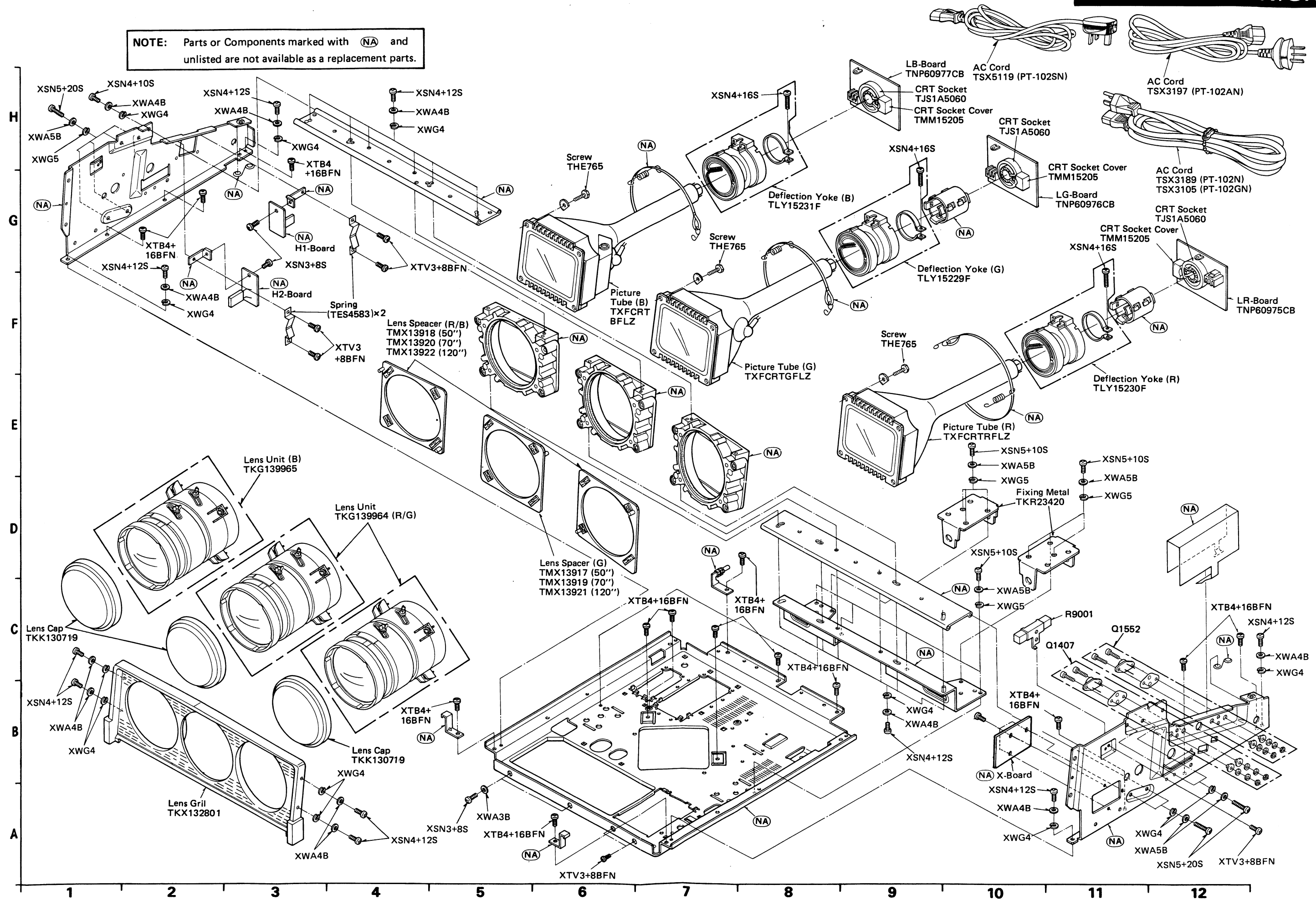
IC871	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
SECAM	7.6V	0.3V	11.6V	11.8V	0V	0.2V	11.7V	0.2V	11.9V	7.4V	11.2V	0.1V	11.8V	6.6V	11.8V	5.1V	2.7V	3.3V
PAL	7.6V	0.3V	11.6V	11.8V	0V	0.2V	0V	0.2V	11.9V	9.4V	11.2V	1.0V	11.8V	6.6V	11.8V	5.1V	0V	3.3V
NTSC	0.2V	9.1V	11.6V	11.8V	0V	0V	1.2V	0.2V	11.9V	9.4V	11.2V	1.5V	11.8V	11.6V	11.8V	5.1V	0V	3.3V

IC802	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
SECAM	6.7V	6.9V	7.1V	4.8V	10.2V	4.8V	3.2V	0.1V	3.2V	3.3V	0V	2.3V	0V	2.3V	3.2V	11.7V	7.2V	2.4V	0.3V	3.2V	4.9V	10.1V	5.1V	
PAL	7.0V	7.0V	6.4V	4.8V	10.2V	4.7V	3.2V	1.1V	2.5V	7.5V	0V	3.3V	0V	2.3V	3.2V	11.7V	7.2V	2.4V	0.3V	3.2V	4.9V	10.1V	5.1V	



[illegible]

**NOTE:** Parts or Components marked with (NA) and unlisted are not available as a replacement parts.



Screw THE758 x 2  
 Washer THW70023W x 2  
 Washer THW70024 x 2  
 Color TKR23520 x 2  
 Screw XYN5+E12S x 2

RESISTOR

	Part No.		Description
Example:	ERD25TJ104	Ⓒ	100K Ⓐ 1/4W

	Part No.	Description
Example:	ECKF1H103ZF (C)	0.01μF (Z) 50V

A diagram of a rectangular container. On the left side, there is a vertical dashed line. On the right side, there is a label 'NA' inside an oval, connected to the container by a horizontal line.

TKR23410

See Page 23

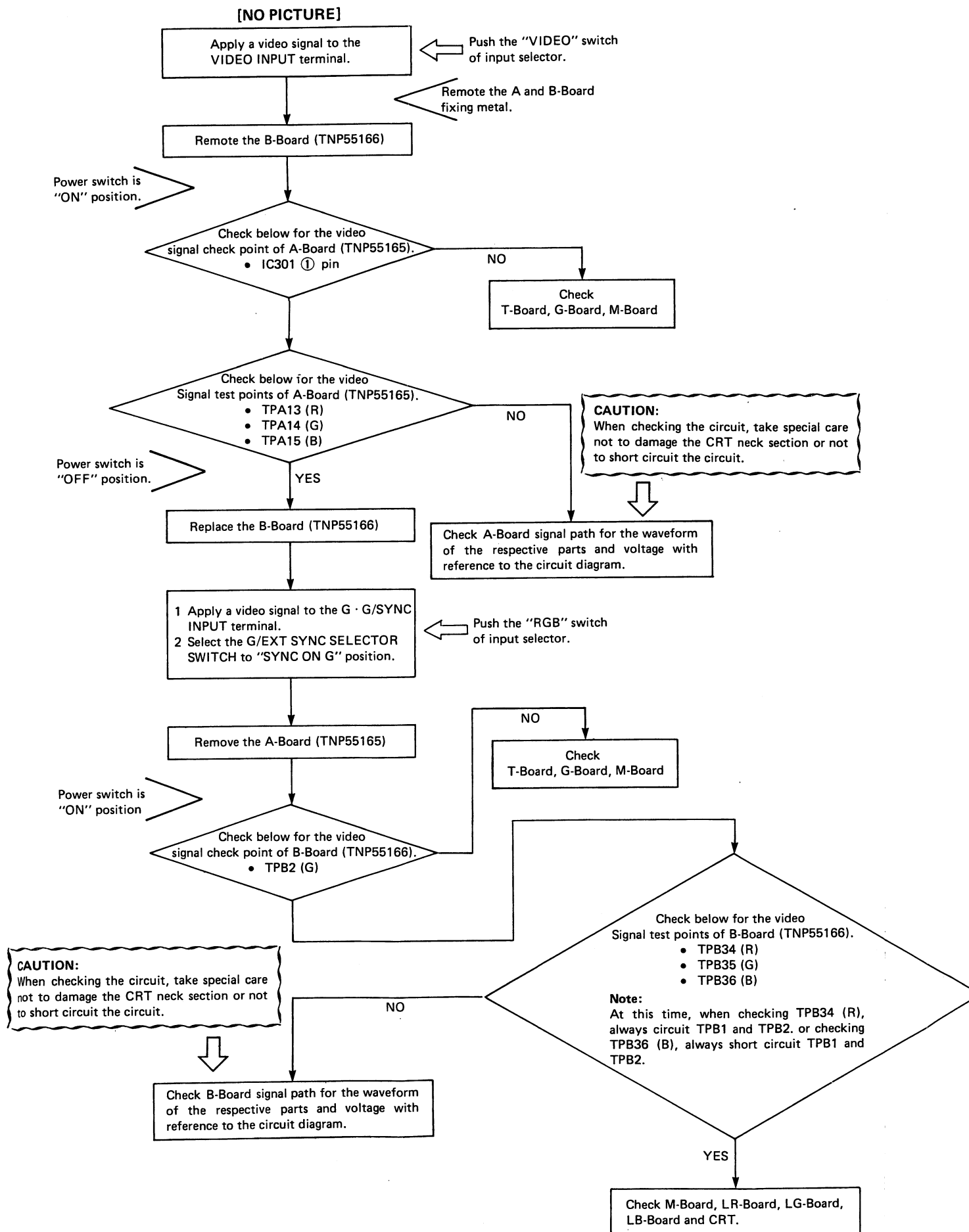
**CA**  
Wh  
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# TROUBLESHOOTING

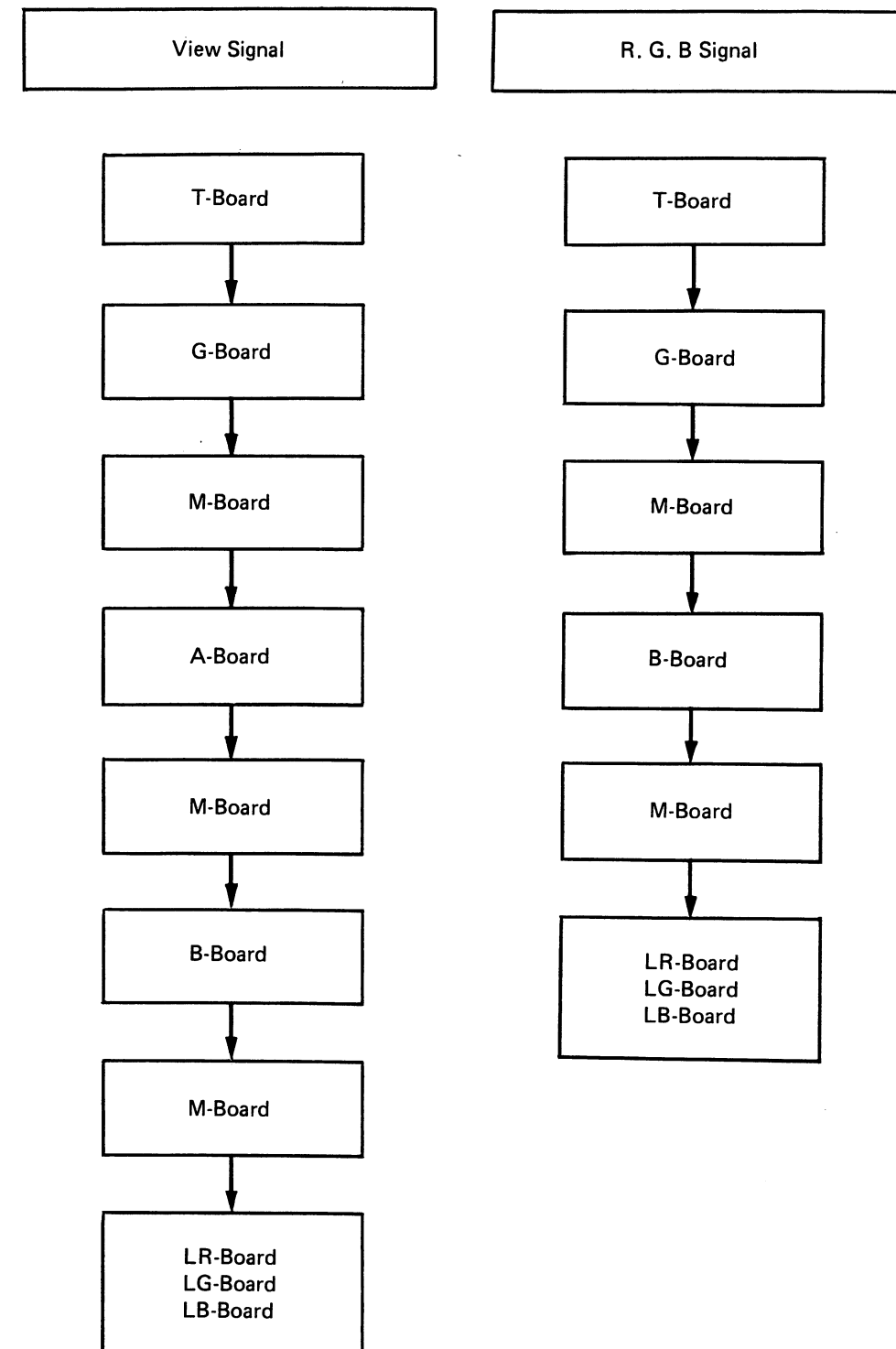
E

1/4W

50V



## Signal Road



## REPLACEMENT PARTS LIST

Important safety notice

Components identified by  $\Delta$  mark have special characteristics important for safety.  
When replacing any of these components, use only manufacturer's specified parts.

Note: All the printed circuit boards except LR-Board, LG-Board and LB-Board are not available as a complete printed circuit board.

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
RESISTORS					
R1	ERD25FJ750	C 750HM, J, 1/4W	R47	ERJ8GICYJ561	M 5600HM, J, 1/8W
R2	ERD25FJ750	C 750HM, J, 1/4W	R48	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R3	ERD25FJ750	C 750HM, J, 1/4W	R49	ERJ8GICYJ153	M 15KOHM, J, 1/8W
R4	ERD25FJ750	C 750HM, J, 1/4W	R50	ERJ8GICYJ152	M 1.5KOHM, J, 1/8W
R5	ERD25FJ750	C 750HM, J, 1/4W	R51	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R10	ERJ8GICYJ153	M 15KOHM, J, 1/8W	R52	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R11	ERJ8GICYJ622	M 6.2KOHM, J, 1/8W	R53	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R12	ERJ8GICYJ153	M 15KOHM, J, 1/8W	R54	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R13	ERJ8GICYJ622	M 6.2KOHM, J, 1/8W	R55	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R14	ERJ8GICYJ153	M 15KOHM, J, 1/8W	R56	ERJ8GICYJ391	M 3900HM, J, 1/8W
R15	ERJ8GICYJ622	M 6.2KOHM, J, 1/8W	R57	ERJ8GICYJ391	M 3900HM, J, 1/8W
R16	ERJ8GICYJ391	M 3900HM, J, 1/8W	R58	ERJ8GICYJ391	M 3900HM, J, 1/8W
R17	ERJ8GICYJ391	M 3900HM, J, 1/8W	R59	ERJ8GICYJ391	M 3900HM, J, 1/8W
R18	ERJ8GICYJ391	M 3900HM, J, 1/8W	R60	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R19	ERJ8GICYJ681	M 6800HM, J, 1/8W	R61	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R20	ERJ8GICYJ271	M 2700HM, J, 1/8W	R62	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R21	ERJ8GICYJ681	M 6800HM, J, 1/8W	R63	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R22	ERJ8GICYJ271	M 2700HM, J, 1/8W	R64	ERJ8GICYJ751	M 7500HM, J, 1/8W
R23	ERJ8GICYJ681	M 6800HM, J, 1/8W	R65	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R24	ERJ8GICYJ271	M 2700HM, J, 1/8W	R66	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R25	ERJ8GICYJ153	M 15KOHM, J, 1/8W	R67	ERJ8GICYJ751	M 7500HM, J, 1/8W
R26	ERJ8GICYJ622	M 6.2KOHM, J, 1/8W	R68	ERJ8GICYJ123	M 12KOHM, J, 1/8W
R27	ERJ8GICYJ153	M 15KOHM, J, 1/8W	R69	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R28	ERJ8GICYJ622	M 6.2KOHM, J, 1/8W	R70	ERJ8GICYJ391	M 3900HM, J, 1/8W
R29	ERJ8GICYJ153	M 15KOHM, J, 1/8W	R71	ERJ8GICYJ272	M 2.7KOHM, J, 1/8W
R30	ERJ8GICYJ622	M 6.2KOHM, J, 1/8W	R72	ERJ8GICYJ391	M 3900HM, J, 1/8W
R31	ERJ8GICYJ122	M 1.2KOHM, J, 1/8W	R73	ERJ8GICYJ272	M 2.7KOHM, J, 1/8W
R32	ERJ8GICYJ471	M 4700HM, J, 1/8W	R74	ERJ8GICYJ123	M 12KOHM, J, 1/8W
R33	ERJ8GICYJ122	M 1.2KOHM, J, 1/8W	R75	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R34	ERJ8GICYJ471	M 4700HM, J, 1/8W	R76	ERJ8GICYJ221	M 2200HM, J, 1/8W
R35	ERJ8GICYJ122	M 1.2KOHM, J, 1/8W	R77	ERJ8GICYJ241	M 2400HM, J, 1/8W
R36	ERJ8GICYJ471	M 4700HM, J, 1/8W	R78	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R37	ERJ8GICYJ122	M 1.2KOHM, J, 1/8W	R79	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R38	ERJ8GICYJ122	M 1.2KOHM, J, 1/8W	R80	ERJ8GICYJ221	M 2200HM, J, 1/8W
R39	ERJ8GICYJ122	M 1.2KOHM, J, 1/8W	R81	ERJ8GICYJ241	M 2400HM, J, 1/8W
R40	ERJ8GICYJ332	M 3.3KOHM, J, 1/8W	R82	ERJ8GICYJ123	M 12KOHM, J, 1/8W
R41	ERJ8GICYJ821	M 8200HM, J, 1/8W	R83	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R42	ERJ8GICYJ821	M 8200HM, J, 1/8W	R84	ERJ8GICYJ123	M 12KOHM, J, 1/8W
R43	ERJ8GICYJ821	M 8200HM, J, 1/8W	R85	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R44	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R86	ERJ8GICYJ221	M 2200HM, J, 1/8W
R45	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W	R87	ERJ8GICYJ241	M 2400HM, J, 1/8W
R46	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W	R88	ERJ8GICYJ221	M 2200HM, J, 1/8W
			R89	ERJ8GICYJ241	M 2400HM, J, 1/8W
			R90	ERJ8GICYJ393	M 39KOHM, J, 1/8W

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R91	ERJ8GICYJ393	M 39KOHM, J, 1/8W	R140	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R92	ERJ8GICYJ202	M 2KOHM, J, 1/8W	R141	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R93	ERJ8GICYJ202	M 2KOHM, J, 1/8W	R142	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R94	ERJ8GICYJ202	M 2KOHM, J, 1/8W	R143	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R95	ERJ8GICYJ152	M 1.5KOHM, J, 1/8W	R145	ERJ8GICYJ101	M 100OHM, J, 1/8W
R96	ERJ8GICYJ152	M 1.5KOHM, J, 1/8W	R146	ERJ8GICYJ101	M 100OHM, J, 1/8W
R97	ERJ8GICYJ152	M 1.5KOHM, J, 1/8W	R147	ERJ8GICYJ101	M 100OHM, J, 1/8W
R98	ERJ8GICYJ101	M 100OHM, J, 1/8W	R148	ERJ8GICYJ101	M 100OHM, J, 1/8W
R99	ERJ8GICYJ271	M 270OHM, J, 1/8W	R149	ERJ8GICYJ101	M 100OHM, J, 1/8W
R100	ERJ8GICYJ101	M 100OHM, J, 1/8W	R150	ERJ8GICYJ101	M 100OHM, J, 1/8W
R101	ERJ8GICYJ563	M 56KOHM, J, 1/8W	R151	ERJ8GICYJ271	M 270OHM, J, 1/8W
R102	ERDS1FJ100	C 100OHM, J, 1/2W	R152	ERJ8GICYJ271	M 270OHM, J, 1/8W
R103	ERJ8GICYJ561	M 560OHM, J, 1/8W	R153	ERJ8GICYJ271	M 270OHM, J, 1/8W
R104	ERDS1FJ100	C 100OHM, J, 1/2W	R154	ERJ8GICYJ241	M 240OHM, J, 1/8W
R105	ERJ8GICYJ561	M 560OHM, J, 1/8W	R155	ERJ8GICYJ241	M 240OHM, J, 1/8W
R106	ERDS1FJ100	C 100OHM, J, 1/2W	R156	ERJ8GICYJ241	M 240OHM, J, 1/8W
R107	ERJ8GICYJ561	M 560OHM, J, 1/8W	R157	ERJ8GICYJ241	M 240OHM, J, 1/8W
R108	ERJ8GICYJ824	M 820KOHM, J, 1/8W	R158	ERJ8GICYJ241	M 240OHM, J, 1/8W
R109	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R159	ERJ8GICYJ241	M 240OHM, J, 1/8W
R110	ERJ8GICYJ221	M 220OHM, J, 1/8W	R160	ERJ8GICYJ272	M 2.7KOHM, J, 1/8W
R111	ERJ8GICYJ824	M 820KOHM, J, 1/8W	R161	ERJ8GICYJ153	M 15KOHM, J, 1/8W
R112	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R162	ERJ8GICYJ272	M 2.7KOHM, J, 1/8W
R113	ERJ8GICYJ221	M 220OHM, J, 1/8W	R163	ERJ8GICYJ153	M 15KOHM, J, 1/8W
R114	ERJ8GICYJ824	M 820KOHM, J, 1/8W	R164	ERJ8GICYJ272	M 2.7KOHM, J, 1/8W
R115	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R165	ERJ8GICYJ153	M 15KOHM, J, 1/8W
R116	ERJ8GICYJ221	M 220OHM, J, 1/8W	R166	ERJ8GICYJ271	M 270OHM, J, 1/8W
R117	ERDS1FJ100	C 100OHM, J, 1/2W	R167	ERJ8GICYJ271	M 270OHM, J, 1/8W
R118	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R168	ERJ8GICYJ271	M 270OHM, J, 1/8W
R119	ERDS1FJ100	C 100OHM, J, 1/2W	R172	ERJ8GICYJ271	M 270OHM, J, 1/8W
R120	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R173	ERJ8GICYJ241	M 240OHM, J, 1/8W
R121	ERDS1FJ100	C 100OHM, J, 1/2W	R174	ERJ8GICYJ271	M 270OHM, J, 1/8W
R122	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R175	ERJ8GICYJ241	M 240OHM, J, 1/8W
R123	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R176	ERJ8GICYJ271	M 270OHM, J, 1/8W
R124	ERJ8GICYJ183	M 18KOHM, J, 1/8W	R177	ERJ8GICYJ241	M 240OHM, J, 1/8W
R125	ERJ8GICYJ682	M 6.8KOHM, J, 1/8W	R178	ERJ8GICYJ152	M 1.5KOHM, J, 1/8W
R126	ERJ8GICYJ152	M 1.5KOHM, J, 1/8W	R179	ERJ8GICYJ152	M 1.5KOHM, J, 1/8W
R127	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W	R180	ERJ8GICYJ152	M 1.5KOHM, J, 1/8W
R128	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W	R181	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W
R129	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W	R182	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R130	ERJ8GICYJ122	M 1.2KOHM, J, 1/8W	R183	ERJ8GICYJ332	M 3.3KOHM, J, 1/8W
R131	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R184	ERJ8GICYJ122	M 1.2KOHM, J, 1/8W
R132	ERJ8GICYJ101	M 100OHM, J, 1/8W	R185	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R133	EVN64AA00B54	H. SHADING 50KOHMB	R186	EVN64AA00B14	C V.REVISION 10KOHMB
R134	ERJ8GICYJ563	M 56KOHM, J, 1/8W	R187	ERJ8GICYJ332	M 3.3KOHM, J, 1/8W
R135	ERJ8GICYJ223	M 22KOHM, J, 1/8W	R188	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W
R136	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R189	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W
R137	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R190	ERJ8GICYJ202	M 2KOHM, J, 1/8W
R138	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R191	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R139	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R192	EVN64AA00B13	H. REVISION 1KOHMB
			R193	ERJ8GICYJ332	M 3.3KOHM, J, 1/8W
			R194	ERJ8GICYJ101	M 100OHM, J, 1/8W
			R195	ERJ8GICYJ153	M 15KOHM, J, 1/8W



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R196	ERJ8GICYJ392	M 3.9KOHM, J, 1/8W	R241	ERDS1FJ221	C 220OHM, J, 1/2W
R197	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W	R242	ERDS1FJ1R0	C 1OHM, J, 1/2W
R198	ERJ8GICYJ122	M 1.2KOHM, J, 1/8W	R243	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R199	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R244	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R201	ERDS1FJ1R0	C 1OHM, J, 1/2W	R245	ERJ8GICYJ121	M 120OHM, J, 1/8W
R202	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R246	ERJ8GICYJ121	M 120OHM, J, 1/8W
R203	ERJ8GICYJ121	M 120OHM, J, 1/8W	R247	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W
R204	ERDS1FJ221	C 220OHM, J, 1/2W	R248	ERX2SJ8R2H	M 8.2OHM, J, 2W
R205	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R249	ERX2SJ8R2H	M 8.2OHM, J, 2W
R206	ERJ8GICYJ121	M 120OHM, J, 1/8W	R250	ERX2SJ8R2H	M 8.2OHM, J, 2W
R207	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W	R251	ERX2SJ8R2H	M 8.2OHM, J, 2W
R208	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W	R252	ERX2SJ8R2H	M 8.2OHM, J, 2W
R209	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W	R253	ERX2SJ8R2H	M 8.2OHM, J, 2W
R210	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W	R254	ERJ8GICYJ121	M 120OHM, J, 1/8W
R211	ERDS1FJ221	C 220OHM, J, 1/2W	R255	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W
R212	ERDS1FJ1R0	C 1OHM, J, 1/2W	R256	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W
R213	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R257	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W
R214	ERJ8GICYJ121	M 120OHM, J, 1/8W	R301	ERJ8GICYJ153	M 15KOHM, J, 1/8W
R215	ERJ8GICYJ121	M 120OHM, J, 1/8W	R302	ERJ8GICYJ153	M 15KOHM, J, 1/8W
R216	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R303	ERJ8GICYJ153	M 15KOHM, J, 1/8W
R217	ERJ8GICYJ121	M 120OHM, J, 1/8W	R304	ERJ8GICYJ153	M 15KOHM, J, 1/8W
R218	ERDS1FJ1R0	C 1OHM, J, 1/2W	R305	ERJ8GICYJ473	M 47KOHM, J, 1/8W
R219	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R306	ERJ8GICYJ273	M 27KOHM, J, 1/8W
R220	ERJ8GICYJ121	M 120OHM, J, 1/8W	R307	ERJ8GICYJ393	M 39KOHM, J, 1/8W
R221	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R308	ERJ8GICYJ331	M 330OHM, J, 1/8W
R222	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W	R309	ERJ8GICYJ122	M 1.2KOHM, J, 1/8W
R223	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W	R310	ERJ8GICYJ224	M 220KOHM, J, 1/8W
R224	ERDS1FJ221	C 220OHM, J, 1/2W	R311	ERJ8GICYJ391	M 390OHM, J, 1/8W
R225	ERDS1FJ221	C 220OHM, J, 1/2W	R312	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R226	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W	R313	ERJ8GICYJ471	M 470OHM, J, 1/8W
R227	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W	R314	ERJ8GICYJ560	M 560OHM, J, 1/8W
R228	ERJ8GICYJ121	M 120OHM, J, 1/8W	R315	ERJ8GICYJ221	M 220OHM, J, 1/8W
R229	ERDS1FJ1R0	C 1OHM, J, 1/2W	R316	ERJ8GICYJ101	M 100OHM, J, 1/8W
R230	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R317	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R231	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R318	ERJ8GICYJ821	M 820OHM, J, 1/8W
R232	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R319	ERJ8GICYJ122	M 1.2KOHM, J, 1/8W
R233	ERJ8GICYJ121	M 120OHM, J, 1/8W	R320	ERJ8GICYJ152	M 1.5KOHM, J, 1/8W
R234	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R321	ERJ8GICYJ750	M 750OHM, J, 1/8W
R235	ERDS1FJ1R0	C 1OHM, J, 1/2W	R322	ERJ8GICYJ750	M 750OHM, J, 1/8W
R236	ERJ8GICYJ121	M 120OHM, J, 1/8W	R323	ERJ8GICYJ153	M 15KOHM, J, 1/8W
R237	ERDS1FJ221	C 220OHM, J, 1/2W	R324	ERJ8GICYJ822	M 8.2KOHM, J, 1/8W
R238	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W	R325	ERJ8GICYJ152	M 1.5KOHM, J, 1/8W
R239	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W			
R240	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R326	ERJ8GICYJ152	M 1.5KOHM, J, 1/8W	R370	ERJ8GICYJ681	M 680OHM, J, 1/8W
R327	EVND4AA00B52	500OHMB	R371	ERJ8GICYJ681	M 680OHM, J, 1/8W
R328	ERJ8GICYJ331	M 330OHM, J, 1/8W	R372	ERJ8GICYJ152	M 1.5KOHM, J, 1/8W
R329	ERJ8GICYJ331	M 330OHM, J, 1/8W	R373	ERJ8GICYJ151	M 150OHM, J, 1/8W
R330	ERJ8GICYJ152	M 1.5KOHM, J, 1/8W	R374	ERJ8GICYJ181	M 180OHM, J, 1/8W
R331	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R375	ERJ8GICYJ821	M 820OHM, J, 1/8W
R332	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W	R376	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W
R333	ERJ8GICYJ123	M 12KOHM, J, 1/8W	R377	ERJ8GICYJ123	M 12KOHM, J, 1/8W
R334	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R378	ERJ8GICYJ681	M 680OHM, J, 1/8W
R335	ERJ8GICYJ681	M 680OHM, J, 1/8W	R379	ERJ8GICYJ681	M 680OHM, J, 1/8W
R336	ERJ8GICYJ122	M 1.2KOHM, J, 1/8W	R380	ERJ8GICYJ152	M 1.5KOHM, J, 1/8W
R337	ERJ8GICYJ182	M 1.8KOHM, J, 1/8W	R381	ERJ8GICYJ181	M 180OHM, J, 1/8W
R338	ERJ8GICYJ681	M 680OHM, J, 1/8W	R382	ERJ8GICYJ682	M 6.8KOHM, J, 1/8W
R339	ERJ8GICYJ561	M 560OHM, J, 1/8W	R383	ERJ8GICYJ393	M 39KOHM, J, 1/8W
R340	ERJ8GICYJ121	M 120OHM, J, 1/8W	R384	ERJ8GICYJ223	M 22KOHM, J, 1/8W
R341	ERJ8GICYJ681	M 680OHM, J, 1/8W	R385	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W
R342	ERJ8GICYJ331	M 330OHM, J, 1/8W	R386	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W
R343	ERJ8GICYJ122	M 1.2KOHM, J, 1/8W	R387	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R344	ERJ8GICYJ123	M 12KOHM, J, 1/8W	R388	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R345	ERJ8GICYJ104	M 100KOHM, J, 1/8W	R389	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R346	ERJ8GICYJ122	M 1.2KOHM, J, 1/8W	R390	ERJ8GICYJ822	M 8.2KOHM, J, 1/8W
R347	ERJ8GICYJ473	M 47KOHM, J, 1/8W	R391	ERJ8GICYJ822	M 8.2KOHM, J, 1/8W
R348	ERJ8GICYJ223	M 22KOHM, J, 1/8W	R392	ERJ8GICYJ822	M 8.2KOHM, J, 1/8W
R349	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R393	ERJ8GICYJ474	M 470KOHM, J, 1/8W
R350	ERJ8GICYJ101	M 100OHM, J, 1/8W	R397	ERJ8GICYJ271	M 270OHM, J, 1/8W
R351	ERJ8GICYJ122	M 1.2KOHM, J, 1/8W	R398	ERJ8GICY0R00	M 0OHM, J, 1/8W
R352	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R399	ERDS1FJ101	C 100OHM, J, 1/2W
R353	EVND4AA00B53	SUB CONTRAST 5KOHMB	R401	ERJ8GICYJ682	M 6.8KOHM, J, 1/8W
R354	ERJ8GICYJ682	M 6.8KOHM, J, 1/8W	R402	ERJ8GICYJ471	M 470OHM, J, 1/8W
R355	ERJ8GICYJ183	M 18KOHM, J, 1/8W	R403	ERJ8GICYJ471	M 470OHM, J, 1/8W
R356	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W	R404	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R357	ERDS1FJ100	C 100OHM, J, 1/2W	R405	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R358	ERJ8GICYJ151	M 150OHM, J, 1/8W	R406	ERJ8GICYJ101	M 100OHM, J, 1/8W
R359	ERJ8GICYJ181	M 180OHM, J, 1/8W	R407	ERJ8GICYJ125	C 1.2MOHM, J, 1/8W
R360	ERJ8GICYJ821	M 820OHM, J, 1/8W	R413	ERJ8GICYJ271	M 270OHM, J, 1/8W
R361	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W	R414	ERJ8GICYJ684	M 680KOHM, J, 1/8W
R362	ERJ8GICYJ123	M 12KOHM, J, 1/8W	R415	ERJ8GICYJ332	M 3.3KOHM, J, 1/8W
R363	ERJ8GICYJ681	M 680OHM, J, 1/8W	R416	EXBP84332J	R-NETWORK
R364	ERJ8GICYJ681	M 680OHM, J, 1/8W	R417	ERJ8GICYJ332	M 3.3KOHM, J, 1/8W
R365	ERJ8GICYJ152	M 1.5KOHM, J, 1/8W	R419	EVND4AA00B54	NTSC SUB V. HOLD 50KOHMB
R366	ERJ8GICYJ151	M 150OHM, J, 1/8W	R420	ERJ8GICYJ393	M 39KOHM, J, 1/8W
R367	ERJ8GICYJ821	M 820OHM, J, 1/8W	R421	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R368	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W	R423	ERJ8GICYJ473	M 47KOHM, J, 1/8W
R369	ERJ8GICYJ123	M 12KOHM, J, 1/8W	R424	EVND4AA00B24	RGB V. HOLD 20KOHMB
			R425	ERJ8GICYJ682	M 6.8KOHM, J, 1/8W



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R426	EXBT44332M	R-NETWORK	R491	ERJ8GICYJ271	M 270OHM, J, 1/8W
R427	EXBP84332J	R-NETWORK	R492	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R428	EVND4AA00B25	VIDEO V. SIZE 200KOHMB	R493	ERJ8GICYJ223	M 22KOHM, J, 1/8W
R429	ERJ8GICYJ563	M 56KOHM, J, 1/8W	R494	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R432	EVND4AA00B25	NTSC SUB V. SIZE 200KOHMB	R497	ERJ8GICYJ824	M 820KOHM, J, 1/8W
R433	ERJ8GICYJ124	M 120KOHM, J, 1/8W	R498	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R434	ERJ8GICYJ473	M 47KOHM, J, 1/8W	R503	EXBP84332J	R-NETWORK
R437	EVND4AA00B35	RGB V. SIZE 300KOHMB	R506	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W
R438	ERJ8GICYJ101	M 100OHM, J, 1/8W	R507	ERJ8GICYJ681	M 680OHM, J, 1/8W
R439	ERG1SJ561P	M 560OHM, J, 1W	R512	ERJ8GICYJ682	M 6.8KOHM, J, 1/8W
R440	ERDS1FJ102	C 1KOHM, J, 1/2W	R513	ERJ8GICYJ682	M 6.8KOHM, J, 1/8W
R441	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R514	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W
R442	EVND4AA00B34	V. LIN 30KOHMB	R515	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W
R443	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R516	ERJ8GICYJ153	M 15KOHM, J, 1/8W
R444	ERJ8GICYJ681	M 680OHM, J, 1/8W	R517	ERJ8GICYJ471	M 470OHM, J, 1/8W
R451	ERJ8GICYJ392	M 3.9KOHM, J, 1/8W	R518	ERJ8GICYJ471	M 470OHM, J, 1/8W
R452	ERJ8GICYJ473	M 47KOHM, J, 1/8W	R519	EVND4AA00B13	P/S H. HOLD 1KOHMB
R453	ERJ8GICYJ823	M 82KOHM, J, 1/8W	R520	EVND4AA00B13	NTSC V. HOLD 1KOHMB
R454	ERDS1FJ332	C 3.3KOHM, J, 1/2W	R521	ERO25CKG1801	M 1.8KOHM, J, 1/4W
R455	ERG2SJ222H	M 2.2KOHM, J, 2W	R522	ERJ8GICYJ471	M 470OHM, J, 1/8W
R456	ERG2SJ332H	M 3.3KOHM, J, 2W	R523	EVND4AA00B13	RGB V. HOLD 1KOHMB
R457	ERDS1TJ102	C 1KOHM, J, 1/2W	ΔR530	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R458	ERDS1TJ3R3	C 3.3OHM, J, 1/2W	R531	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W
R459	ERDS1TJ223	C 22KOHM, J, 1/2W	R532	ERJ8GICYJ103	M 10KOHM, J, 1/8W
ΔR461	ERQ2CJ680	F 68OHM, 2W	R533	ERG2ANJ152H	M 1.5KOHM, J, 2W
R462	ERDS1FJ3R3	C 3.3OHM, J, 1/2W	ΔR534	EVND4AA00B33	PROTECTOR ADJ. 3KOHMB
R463	ERDS1FJ3R3	C 3.3OHM, J, 1/2W	ΔR535	ERJ8GICYJ332	M 3.3KOHM, J, 1/8W
R464	ERG1SJ102P	M 1KOHM, J, 1W	ΔR537	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W
R465	ERG1SJ221P	M 220OHM, J, 1W	ΔR538	ERJ8GICYJ122	M 1.2KOHM, J, 1/8W
R466	ERD25FJ1R0	C 1OHM, J, 1/4W	ΔR539	ERD25FJ222	C 2.2KOHM, J, 1/4W
R467	ERG2SJ272H	M 2.7KOHM, J, 2W	ΔR540	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W
R468	ERD25FJ472	C 4.7KOHM, J, 1/4W	ΔR541	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R469	ERJ8GICYJ101	M 100OHM, J, 1/8W	ΔR542	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R470	ERJ8GICYJ271	M 270OHM, J, 1/8W	ΔR543	ERJ8GICYJ682	M 6.8KOHM, J, 1/8W
R481	ERJ8GICYJ333	M 33KOHM, J, 1/8W	ΔR544	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W
R482	ERJ8GICYJ101	M 100OHM, J, 1/8W	ΔR545	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R483	ERJ8GICYJ104	M 100KOHM, J, 1/8W	R551	ERJ8GICYJ333	M 33KOHM, J, 1/8W
R484	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R552	ERJ8GICYJ332	C 3.3KOHM, J, 1/8W
R485	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R553	ERJ8GICYJ101	M 100OHM, J, 1/8W
R486	ERD25FJ100	C 10OHM, J, 1/4W	R554	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R487	ERJ8GICYJ563	M 56KOHM, J, 1/8W	R557	ERJ8GICYJ104	C 100KOHM, J, 1/8W
R488	ERJ8GICYJ223	M 22KOHM, J, 1/8W	R558	ERJ8GICYJ104	C 100KOHM, J, 1/8W
R489	ERJ8GICYJ473	M 47KOHM, J, 1/8W	R559	ERJ8GICYJ683	M 68KOHM, J, 1/8W
R490	ERJ8GICYJ104	M 100KOHM, J, 1/8W	R560	ERJ8GICYJ271	M 270OHM, J, 1/8W

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R561	ERJ8GCYJ472	M 4.7KOHM, J, 1/8W	R632	ERJ8GCYJ471	M 470OHM, J, 1/8W
R562	ERJ8GCYJ272	M 2.7KOHM, J, 1/8W	R633	EVND4AA00B23	DL. ADJ. 2KOHMB
R563	ERD25FJ100	C 100OHM, J, 1/4W	R634	ERJ8GCYJ104	M 100KOHM, J, 1/8W
R564	ERJ8GCYJ101	M 100OHM, J, 1/8W	R635	ERJ8GCYJ104	M 100KOHM, J, 1/8W
R567	ERJ8GCYJ123	M 12KOHM, J, 1/8W	R636	ERJ8GCYJ823	M 82KOHM, J, 1/8W
R568	EVND4AA00B24	H. CENTERING 20KOHMB	R637	ERJ8GCYJ822	M 8.2KOHM, J, 1/8W
R576	ERJ8GCYJ472	M 4.7KOHM, J, 1/8W	R638	ERJ8GCYJ332	M 3.3KOHM, J, 1/8W
R577	ERJ8GCYJ153	M 15KOHM, J, 1/8W	R639	ERJ8GCYJ561	M 560OHM, J, 1/8W
R582	ERJ8GCYJ101	M 100OHM, J, 1/8W	R641	ERJ8GCYJ102	M 1KOHM, J, 1/8W
R583	ERJ8GCYJ122	M 1.2KOHM, J, 1/8W	R642	ERJ8GCYJ331	M 330OHM, J, 1/8W
R584	ERJ8GCYJ122	M 1.2KOHM, J, 1/8W	R643	ERJ8GCYJ331	M 330OHM, J, 1/8W
R585	ERJ8GCYJ122	M 1.2KOHM, J, 1/8W	R644	ERJ8GCYJ102	M 1KOHM, J, 1/8W
R586	ERJ8GCYJ122	M 1.2KOHM, J, 1/8W	R645	ERJ8GCYJ331	M 330OHM, J, 1/8W
R588	EXBP84473J	R-NETWORK	R646	EVND4AA00B53	R-Y GAIN 5KOHMB
R589	EXBP84473J	R-NETWORK	R647	ERJ8GCYJ222	M 2.2KOHM, J, 1/8W
R590	ERDS1TJ331	C 330OHM, J, 1/2W	R648	ERJ8GCYJ221	M 220OHM, J, 1/8W
ΔR591	ERDS1TJ823	C 82KOHM, J, 1/2W	R649	ERJ8GCYJ333	M 33KOHM, J, 1/8W
R601	ERJ8GCYJ152	M 1.5KOHM, J, 1/8W	R650	ERJ8GCYJ221	M 220OHM, J, 1/8W
R602	ERJ8GCYJ272	M 2.7KOHM, J, 1/8W	R651	EVND4AA00B23	SECAM DL. ADJ. 2KOHMB
R603	ERJ8GCYJ332	M 3.3KOHM, J, 1/8W	R652	ERJ8GCYJ561	M 560OHM, J, 1/8W
R604	ERJ8GCYJ682	M 6.8KOHM, J, 1/8W	R653	ERJ8GCYJ392	M 3.9KOHM, J, 1/8W
R605	ERJ8GCYJ332	M 3.3KOHM, J, 1/8W	R654	ERJ8GCYJ102	M 1KOHM, J, 1/8W
R606	ERJ8GCYJ332	M 3.3KOHM, J, 1/8W	R655	ERJ8GCYJ391	M 390OHM, J, 1/8W
R607	ERJ8GCYJ392	M 3.9KOHM, J, 1/8W	R656	ERJ8GCYJ391	M 390OHM, J, 1/8W
R608	ERJ8GCYJ102	M 1KOHM, J, 1/8W	R657	ERJ8GCYJ391	M 390OHM, J, 1/8W
R609	ERJ8GCYJ182	M 1.8KOHM, J, 1/8W	R658	ERJ8GCYJ222	M 2.2KOHM, J, 1/8W
R610	ERJ8GCYJ823	M 82KOHM, J, 1/8W	R659	EVND4AA00B53	B-Y DL. 5KOHMB
R611	ERJ8GCYJ333	M 33KOHM, J, 1/8W	R660	ERJ8GCYJ681	M 680OHM, J, 1/8W
R612	ERJ8GCZJ395	C 3.9MOHM, J, 1/8W	R661	ERJ8GCYJ272	M 2.7KOHM, J, 1/8W
R613	ERJ8GCYJ332	M 3.3KOHM, J, 1/8W	R662	ERJ8GCYJ102	M 1KOHM, J, 1/8W
R614	ERJ8GCYJ471	M 470OHM, J, 1/8W	R663	ERJ8GCYJ103	M 1KOHM, J, 1/8W
R616	ERJ8GCYJ102	M 1KOHM, J, 1/8W	R664	ERJ8GCYJ104	M 100KOHM, J, 1/8W
R617	ERJ8GCYJ183	C 18KOHM, J, 1/8W	R665	ERJ8GCYJ391	M 390OHM, J, 1/8W
R618	ERJ8GCYJ104	C 100KOHM, J, 1/8W	R666	ERJ8GCYJ221	M 220OHM, J, 1/8W
R619	EVND4AA00B14	APC 10KOHMB	R667	ERJ8GCYJ224	M 220KOHM, J, 1/8W
R620	ERJ8GCYJ221	M 220OHM, J, 1/8W	R671	ERJ8GCYJ103	M 1KOHM, J, 1/8W
R621	ERJ8GCYJ821	M 820OHM, J, 1/8W	R672	ERJ8GCYJ104	M 100KOHM, J, 1/8W
R622	ERJ8GCYJ392	M 3.9KOHM, J, 1/8W	R673	ERJ8GCYJ104	M 100KOHM, J, 1/8W
R624	ERJ8GCYJ332	M 3.3KOHM, J, 1/8W	R674	ERJ8GCYJ103	M 10KOHM, J, 1/8W
R626	ERJ8GCYJ224	C 220KOHM, J, 1/8W	R675	ERJ8GCYJ683	M 68KOHM, J, 1/8W
R627	ERJ8GCYJ102	M 1KOHM, J, 1/8W	R676	ERJ8GCYJ123	M 12KOHM, J, 1/8W
R628	ERJ8GCYJ102	M 1KOHM, J, 1/8W	R677	ERDS1FJ100	C 100OHM, J, 1/2W
R629	EVND4AA00B14	SUB COLOR 10KOHMB	R678	ERJ8GCYJ273	C 27KOHM, J, 1/8W
R630	ERJ8GCYJ102	M 1KOHM, J, 1/8W	R679	ERJ8GCYJ103	M 10KOHM, J, 1/8W
R631	ERDS1FJ100	C 100OHM, J, 1/2W	R680	ERJ8GCYJ103	M 10KOHM, J, 1/8W

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R681	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R729	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W
R682	ERJ8GICYJ101	M 100OHM, J, 1/8W	R730	ERD25FJ102	C 1KOHM, J, 1/4W
R683	ERJ8GICYJ393	M 39KOHM, J, 1/8W	R731	ERD25FJ120	C 120OHM, J, 1/4W
R684	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W	R732	ERJ8GICYJ123	M 12KOHM, J, 1/8W
R685	ERJ8GICYJ684	M 680KOHM, J, 1/8W	R733	ERJ8GICYJ154	C 150KOHM, J, 1/8W
R686	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W	R734	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R687	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W	R735	ERJ8GICYJ123	M 12KOHM, J, 1/8W
R688	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W	R736	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R689	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W	R737	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W
R690	ERJ8GICYJ682	M 6.8KOHM, J, 1/8W	R738	ERJ8GICYJ821	M 820OHM, J, 1/8W
R691	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R739	ERJ8GICYJ273	M 27KOHM, J, 1/8W
R692	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R740	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R693	ERJ8GICYJ823	M 82KOHM, J, 1/8W	R741	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R694	ERJ8GICYJ104	M 100KOHM, J, 1/8W	R742	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W
R695	ERJ8GICYJ104	M 100KOHM, J, 1/8W	R743	ERJ8GICYJ684	M 680KOHM, J, 1/8W
R696	ERJ8GICYJ153	M 15KOHM, J, 1/8W	R744	ERJ8GICYJ682	M 6.8KOHM, J, 1/8W
R697	ERJ8GICYJ104	M 100KOHM, J, 1/8W	R745	EVND4H00GB24	H/L PIN. 20KOHMB
R698	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R746	ERJ8GICYJ123	M 12KOHM, J, 1/8W
R701	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R753	ERJ8GICYJ333	M 33KOHM, J, 1/8W
R702	ERJ8GICYJ332	M 3.3KOHM, J, 1/8W	R755	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W
R704	ERJ8GICYJ333	M 33KOHM, J, 1/8W	R756	ERO25CKF1203	M 120KOHM, F, 1/4W
R705	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W	R757	ERO25CKF4702	M 47KOHM, F, 1/4W
R707	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R758	ERDS1TJ471	C 470OHM, J, 1/2W
R708	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R759	ERDS1TJ471	C 470OHM, J, 1/2W
R709	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R760	ERO25CKF2002	M 20KOHM, F, 1/4W
R710	ERD25FJ100	C 100OHM, J, 1/4W	R761	ERO25CKF2002	M 20KOHM, F, 1/4W
R711	ERJ8GICYJ473	C 47KOHM, J, 1/8W	R762	ERO25CKF6800	M 680OHM, F 1/4W
R712	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R763	ERO25CKF6800	M 680OHM, F 1/4W
R713	ERJ8GICYJ331	M 330OHM, J, 1/8W	R764	ERO25CKF2002	M 20KOHM, F, 1/4W
R714	ERO25CKF2002	M 20KOHM, F, 1/4W	R765	ERD25FJ471	C 470OHM, J, 1/4W
R715	ERO25CKF1203	M 120KOHM, F, 1/4W	R766	ERO25CKF3301	M 3.3KOHM, F, 1/4W
R716	ERD25FJ100	C 100OHM, J, 1/4W	R767	ERO25CKF1203	M 120KOHM, F, 1/4W
R717	ERO25CKF4702	M 47KOHM, F, 1/4W	R768	ERJ8GICYJ273	M 27KOHM, J, 1/8W
R718	ERJ8GICYJ272	M 2.7KOHM, J, 1/8W	R769	ERJ8GICYJ822	M 8.2KOHM, J, 1/8W
R719	ERJ8GICYJ272	M 2.7KOHM, J, 1/8W	R770	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R720	ERO25CKF2002	M 20KOHM, F, 1/4W	R771	ERD25FJ222	C 2.2KOHM, J, 1/4W
R721	ERD25FJ471	C 470OHM, J, 1/4W	R772	ERDS1FJ222	C 2.2KOHM, J, 1/2W
R722	ERO25CKF3301	M 3.3KOHM, F, 1/4W	R774	ERDS1FJ821	C 820OHM, J, 1/2W
R723	ERO25CKF6800	M 680OHM, F 1/4W	R775	ERDS1FJ330	C 33OHM, J, 1/2W
R724	ERO25CKF6800	M 680OHM, F 1/4W	R776	ERJ8GICYJ101	M 100OHM, J, 1/8W
R725	ERO25CKF1203	M 120KOHM, F, 1/4W	R777	ERJ8GICYJ334	M 330KOHM, J, 1/8W
R726	ERO25CKF2002	M 20KOHM, F, 1/4W	R778	ERJ8GCZJ155	M 1.5MOHM, J, 1/8W
R727	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W	R780	ERJ8GICYJ563	M 56KOHM, J, 1/8W
R728	ERD25FJ472	C 4.7KOHM, J, 1/4W	R781	ERJ8GICYJ563	M 56KOHM, J, 1/8W

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R782	ERJ8GICYJ223	M 22KOHM, J, 1/8W	R832	ERJ8GICYJ822	M 8.2KOHM, J, 1/8W
R783	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R833	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W
R784	ERJ8GICYJ223	M 22KOHM, J, 1/8W	R834	ERJ8GICYJ471	M 470OHM, J, 1/8W
R785	ERDS1TJ102	C 1KOHM, J, 1/2W	R835	ERJ8GICYJ563	M 56KOHM, J, 1/8W
R786	ERJ8GICYJ223	M 22KOHM, J, 1/8W	R836	ERJ8GICYJ272	M 2.7KOHM, J, 1/8W
R787	EVND4AA00B52	H. KEYSTONE WAVE CORRECTION 500OHMB	R837	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W
R788	EVND4H00GB24	H/L PIN. 20KOHMB	R838	ERJ8GICYJ332	M 3.3KOHM, J, 1/8W
R789	ERJ8GICYJ223	M 22KOHM, J, 1/8W	R839	ERJ8GICYJ272	M 2.7KOHM, J, 1/8W
R790	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R840	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W
R791	EVND4AA00B52	H. KEYSTONE WAVE CORRECTION 500OHMB	R841	ERJ8GICYJ332	M 3.3KOHM, J, 1/8W
R792	ERJ8GICYJ223	M 22KOHM, J, 1/8W	R842	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W
R793	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W	R843	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W
R794	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W	R844	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W
R795	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W	R845	ERJ8GICYJ154	M 150KOHM, J, 1/8W
R796	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R846	ERJ8GICYJ104	M 100KOHM, J, 1/8W
R797	ERJ8GICYJ104	M 100KOHM, J, 1/8W	R847	ERJ8GICYJ683	M 68KOHM, J, 1/8W
R798	ERJ8GICYJ682	M 6.8KOHM, J, 1/8W	R848	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W
R799	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W	R849	ERJ8GICYJ274	M 270KOHM, J, 1/8W
R800	ERJ8GICYJ104	M 100KOHM, J, 1/8W	R850	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W
R801	ERJ8GICYJ473	M 47KOHM, J, 1/8W	R851	ERJ8GICYJ683	M 68KOHM, J, 1/8W
R802	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W	R852	ERJ8GICYJ104	M 100KOHM, J, 1/8W
R803	ERJ8GICYJ563	M 56KOHM, J, 1/8W	R853	ERJ8GICYJ154	M 150KOHM, J, 1/8W
R804	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R854	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W
R805	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R859	ERDS1FJ1R0	C 1OHM, J, 1/2W
R806	ERJ8GICYJ822	M 8.2KOHM, J, 1/8W	R860	ERDS1FJ1R2	C 1.2OHM, J, 1/2W
R807	ERJ8GICYJ823	M 82KOHM, J, 1/8W	R862	ERDS1FJ471	C 470OHM, J, 1/2W
R808	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R863	ERJ8GICYJ224	C 220KOHM, J, 1/8W
R809	ERJ8GICYJ682	M 6.8KOHM, J, 1/8W	R865	ERJ8GICYJ154	C 150KOHM, J, 1/8W
R810	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R866	ERDS1FJ1R2	C 1.2OHM, J, 1/2W
R811	ERJ8GICYJ274	M 270KOHM, J, 1/8W	R867	ERDS1FJ1R0	C 1OHM, J, 1/2W
R812	ERJ8GICYJ332	M 3.3KOHM, J, 1/8W	R868	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R813	ERJ8GICYJ392	M 3.9KOHM, J, 1/8W	R869	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W
R814	ERJ8GICYJ104	M 100KOHM, J, 1/8W	R870	EVND4H00RB24	B-H CONVERGENCE 20KOHMB
R815	ERJ8GICYJ822	M 8.2KOHM, J, 1/8W	R871	EVND4H00RB24	B-H CONVERGENCE 20KOHMB
R816	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W	R872	ERJ8GICYJ153	M 15KOHM, J, 1/8W
R817	ERJ8GICYJ471	M 470OHM, J, 1/8W	R873	EVND4H00RB24	B-H CONVERGENCE 20KOHMB
R818	ERJ8GICYJ153	M 15KOHM, J, 1/8W	R874	ERJ8GICYJ153	M 15KOHM, J, 1/8W
R819	ERJ8GICYJ563	M 56KOHM, J, 1/8W	R875	ERJ8GICYJ273	M 27KOHM, J, 1/8W
R820	ERJ8GICYJ272	M 2.7KOHM, J, 1/8W	R876	EVND4H00RB24	B-H CONVERGENCE 20KOHMB
R821	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W	R877	ERJ8GICYJ682	M 6.8KOHM, J, 1/8W
R822	ERJ8GICYJ332	M 3.3KOHM, J, 1/8W	R878	EVND4H00RB24	B-H CONVERGENCE 20KOHMB
R823	ERJ8GICYJ272	M 2.7KOHM, J, 1/8W	R879	ERJ8GICYJ682	M 6.8KOHM, J, 1/8W
R824	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W	R880	EVND4H00RB24	B-H CONVERGENCE 20KOHMB
R825	ERJ8GICYJ332	M 3.3KOHM, J, 1/8W	R881	ERJ8GICYJ682	M 6.8KOHM, J, 1/8W
R826	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R882	EVND4H00RB24	B-H CONVERGENCE 20KOHMB
R827	ERJ8GICYJ104	M 100KOHM, J, 1/8W			
R828	ERJ8GICYJ473	M 47KOHM, J, 1/8W			
R829	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W			
R830	ERJ8GICYJ392	M 3.9KOHM, J, 1/8W			
R831	ERJ8GICYJ104	M 100KOHM, J, 1/8W			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R883	ERJ8GCRYJ682	M 6.8KOHM, J, 1/8W	R918	ERJ8GCRYJ682	M 6.8KOHM, J, 1/8W
R884	EVND4H00RB24	R-H CONVERGENCE	R919	EVND4H00BB24	B-V CONVERGENCE
		20KOHMB			20KOHMB
R885	EVND4H00RB24	R-H CONVERGENCE	R920	ERJ8GCRYJ682	M 6.8KOHM, J, 1/8W
		20KOHMB	R921	EVND4H00BB24	B-V CONVERGENCE
					20KOHMB
R886	ERJ8GCRYJ472	M 4.7KOHM, J, 1/8W	R922	ERJ8GCRYJ472	M 4.7KOHM, J, 1/8W
R887	EVND4H00RB24	R-H CONVERGENCE	R923	EVND4H00BB24	B-V CONVERGENCE
		20KOHMB			20KOHMB
R888	ERJ8GCRYJ683	M 68KOHM, J, 1/8W	R924	EVND4H00BB24	B-H CONVERGENCE
R889	ERJ8GCRYJ562	M 5.6KOHM, J, 1/8W			20KOHMB
R890	EVND4H00RB24	R-H CONVERGENCE	R925	ERJ8GCRYJ562	M 5.6KOHM, J, 1/8W
		20KOHMB	R926	EVND4H00BB24	B-H CONVERGENCE
R891	ERJ8GCRYJ103	M 10KOHM, J, 1/8W			20KOHMB
R892	EVND4H00RB24	R-H CONVERGENCE	R927	ERJ8GCRYJ103	M 10KOHM, J, 1/8W
		20KOHMB	R928	EVND4H00BB24	B-V CONVERGENCE
R893	ERJ8GCRYJ153	M 15KOHM, J, 1/8W			20KOHMB
R894	EVND4H00RB24	R-H CONVERGENCE	R929	ERJ8GCRYJ153	M 15KOHM, J, 1/8W
		20KOHMB			
R895	ERJ8GCRYJ562	M 5.6KOHM, J, 1/8W	R930	EVND4H00BB24	B-H CONVERGENCE
R896	EVND4H00RB24	R-H CONVERGENCE			20KOHMB
		20KOHMB	R931	ERJ8GCRYJ562	M 5.6KOHM, J, 1/8W
R897	ERJ8GCRYJ472	M 4.7KOHM, J, 1/8W	R932	EVND4H00BB24	B-H CONVERGENCE
R898	EVND4H00RB24	R-H CONVERGENCE			20KOHMB
		20KOHMB	R933	ERJ8GCRYJ683	M 68KOHM, J, 1/8W
R899	ERJ8GCRYJ153	M 15KOHM, J, 1/8W	R934	ERJ8GCRYJ472	M 4.7KOHM, J, 1/8W
R900	EVND4H00RB24	R-H CONVERGENCE	R935	EVND4H00BB24	B-H CONVERGENCE
		20KOHMB			20KOHMB
R901	EVND4H00RB24	R-H CONVERGENCE	R936	ERJ8GCRYJ153	M 15KOHM, J, 1/8W
		20KOHMB	R937	EVND4H00BB24	B-H CONVERGENCE
R902	ERJ8GCRYJ153	M 15KOHM, J, 1/8W			20KOHMB
R903	ERJ8GCRYJ153	M 15KOHM, J, 1/8W	R938	ERJ8GCRYJ153	M 15KOHM, J, 1/8W
R904	EVND4H00RB24	R-H CONVERGENCE	R939	EVND4H00BB24	B-H CONVERGENCE
		20KOHMB			20KOHMB
R905	EVND4H00RB24	R-H CONVERGENCE	R940	ERJ8GCRYJ153	M 15KOHM, J, 1/8W
		20KOHMB	R941	EVND4H00BB24	B-H CONVERGENCE
R906	ERJ8GCRYJ562	M 5.6KOHM, J, 1/8W			20KOHMB
R907	EVND4H00BB24	B-V CONVERGENCE	R942	ERJ8GCRYJ153	M 15KOHM, J, 1/8W
		20KOHMB	R943	EVND4H00BB24	B-H CONVERGENCE
R908	ERJ8GCRYJ153	M 15KOHM, J, 1/8W			20KOHMB
R909	EVND4H00BB24	B-V CONVERGENCE	R944	EVND4H00GB24	H/L PIN. L
		20KOHMB			20KOHMB
R910	ERJ8GCRYJ153	M 15KOHM, J, 1/8W	R945	ERJ8GCRYJ472	M 4.7KOHM, J, 1/8W
R911	EVND4H00BB24	B-V CONVERGENCE	R946	ERJ8GCRYJ223	M 22KOHM, J, 1/8W
		20KOHMB	R947	ERJ8GCRYJ222	M 2.2KOHM, J, 1/8W
R912	ERJ8GCRYJ273	M 27KOHM, J, 1/8W	R948	ERJ8GCRYJ153	M 15KOHM, J, 1/8W
R913	EVND4H00BB24	B-V CONVERGENCE	R949	ERJ8GCRYJ153	M 15KOHM, J, 1/8W
		20KOHMB	R950	ERJ8GCRYJ102	M 1KOHM, J, 1/8W
R914	ERJ8GCRYJ682	M 6.8KOHM, J, 1/8W	R951	ERJ8GCRYJ472	M 4.7KOHM, J, 1/8W
R915	EVND4H00BB24	B-V CONVERGENCE	R952	ERJ8GCRYJ272	M 2.7KOHM, J, 1/8W
		20KOHMB	R953	ERJ8GCRYJ473	M 47KOHM, J, 1/8W
R916	ERJ8GCRYJ682	M 6.8KOHM, J, 1/8W	R954	ERJ8GCRYJ104	M 100KOHM, J, 1/8W
R917	EVND4H00BB24	B-V CONVERGENCE	R955	EVND4AA00B52	T/B PIN CORRECTION
		20KOHMB			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R956	ERJ8GICYJ104	M 100KOHM, J, 1/8W	R1035	ERDS1TJ271	C 270OHM, J, 1/2W
R958	EVND4AA00B52	T/B PIN CORRECTION 500OHMB	R1036	ERD25FJ271	C 270OHM, J, 1/4W
R960	ERJ8GICYJ473	M 47KOHM, J, 1/8W	R1037	ERD25FJ271	C 270OHM, J, 1/4W
R961	ERDS1TJ152	C 1.5KOHM, J, 1/2W	R1038	ERD25FJ271	C 270OHM, J, 1/4W
R962	ERJ8GICYJ223	M 22KOHM, J, 1/8W	R1039	ERD25FJ271	C 270OHM, J, 1/4W
R970	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R1040	ERD25FJ271	C 270OHM, J, 1/4W
R971	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R1041	ERDS1TJ271	C 270OHM, J, 1/2W
R972	ERJ8GICYJ273	M 27KOHM, J, 1/8W	R1042	ERDS1TJ271	C 270OHM, J, 1/2W
R974	ERJ8GICYJ153	M 15KOHM, J, 1/8W	R1043	ERDS1TJ271	C 270OHM, J, 1/2W
R978	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W	R1044	ERDS1TJ271	C 270OHM, J, 1/2W
R979	ERD25FJ182	C 1.8KOHM, J, 1/4W	R1045	ERDS1TJ271	C 270OHM, J, 1/2W
R980	ERD25FJ100	C 100OHM, J, 1/4W	R1046	ERDS1TJ271	C 270OHM, J, 1/2W
▲R981	ERQ12HJ101P	F 100OHM, J, 1/2W	R1047	ERD25FJ271	C 270OHM, J, 1/4W
R982	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R1048	ERD25FJ271	C 270OHM, J, 1/4W
R983	ERJ8GICYJ123	M 12KOHM, J, 1/8W	R1053	ERD25FJ271	C 270OHM, J, 1/4W
R984	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W	R1054	ERD25FJ271	C 270OHM, J, 1/4W
R985	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R1055	ERD25FJ101	C 100OHM, J, 1/4W
R986	EVND4AA00B24	KEY STONE CORRECTION 20KOHMB	R1060	ERD25FJ223	C 22KOHM, J, 1/4W
R987	ERJ8GICYJ102	M 1KOHM, J, 1/8W	R1061	ERD25FJ123	C 12KOHM, J, 1/4W
R988	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R1062	ERDS1TJ681	C 680OHM, J, 1/2W
R989	ERJ8GICYJ823	M 82KOHM, J, 1/8W	R1063	ERD25TJ271	C 270OHM, J, 1/4W
R990	ERJ8GICYJ153	M 15KOHM, J, 1/8W	R1064	ERD25TJ271	C 270OHM, J, 1/4W
R991	ERJ8GICYJ182	M 1.8KOHM, J, 1/8W	R1065	ERD25TJ271	C 270OHM, J, 1/4W
R993	EVND4AA00B24	SIDE PIN. COMPENSATI -ON 20KOHMB	R1066	ERD25TJ101	M 100OHM, J, 1/4W
R994	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W	R1101	ERJ8GICYJ101	C 100OHM, J, 1/8W
R995	ERJ8GICYJ182	M 1.8KOHM, J, 1/8W	R1102	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W
R996	ERJ8GICYJ104	C 100KOHM, J, 1/8W	R1103	EVN64AA00B24	SUBCONTRAST20KOHMB
R997	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W	R1104	ERJ8GICYJ101	M 100OHM, J, 1/8W
R998	ERJ8GICYJ473	C 47KOHM, J, 1/8W	R1105	ERJ8GICYJ682	M 6.8KOHM, J, 1/8W
R999	ERJ8GICYJ332	M 3.3KOHM, J, 1/8W	R1106	ERJ8GICYJ183	M 18KOHM, J, 1/8W
R1001	ERDS1FJ331	C 330OHM, J, 1/2W	R1107	EVN64AA00B14	SUB BRIGHT 10KOHMB
R1002	ERD25FJ560	C 560OHM, J, 1/4W	R1108	ERJ8GICYJ154	C 150KOHM, J, 1/8W
R1003	ERD25FJ102	C 1KOHM, J, 1/4W	R1109	ERJ8GICYJ153	M 15KOHM, J, 1/8W
R1004	ERD25FJ103	C 10KOHM, J, 1/4W	R1110	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R1005	ERD25FJ223	C 22KOHM, J, 1/4W	R1111	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R1006	ERD25FJ393	C 39KOHM, J, 1/4W	R1112	ERDS1FJ1R0	C 1OHM, J, 1/2W
R1008	ERD25FJ123	C 12KOHM, J, 1/4W	R1113	ERJ8GICYJ332	M 3.3KOHM, J, 1/8W
R1009	ERDS1TJ681	C 680OHM, J, 1/2W	R1114	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R1010	ERDS1FJ100	C 100OHM, J, 1/2W	R1115	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R1011	ERDS1FJ220	C 220OHM, J, 1/2W	R1116	ERJ8GICYJ103	M 10KOHM, J, 1/8W
R1020	ERD25FJ224	C 220KOHM, J, 1/4W	R1117	ERJ8GICYJ223	M 22KOHM, J, 1/8W
R1021	ERD25FJ102	C 1KOHM, J, 1/4W	R1118	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W
R1025	ERD25FJ333	C 33KOHM, J, 1/4W	R1119	ERJ8GICYJ561	M 560OHM, J, 1/8W
R1028	ERD25FJ223	C 22KOHM, J, 1/4W	R1120	EVN64AA00B33	CH. 3KOHMB
R1029	ERD25FJ271	C 270OHM, J, 1/4W	R1121	ERJ8GICYJ223	M 22KOHM, J, 1/8W
R1030	ERD25FJ271	C 270OHM, J, 1/4W	R1122	ERJ8GICYJ562	M 5.6KOHM, J, 1/8W
R1031	ERD25FJ271	C 270OHM, J, 1/4W	R1123	ERJ8GICYJ152	M 1.5KOHM, J, 1/8W
R1032	ERD25FJ271	C 270OHM, J, 1/4W	R1124	ERJ8GICYJ182	M 1.8KOHM, J, 1/8W
R1033	ERD25FJ271	C 270OHM, J, 1/4W	R1125	ERJ8GICYJ182	M 1.8KOHM, J, 1/8W
R1034	ERDS1TJ271	C 270OHM, J, 1/2W			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R1126	ERJ8GCRYJ222	M 2.2KOHM, J, 1/8W	R1178	ERDS1FJ820	C 820HM, J, 1/2W
R1127	ERJ8GCRYJ103	M 10KOHM, J, 1/8W	R1179	ERJ8GCRYJ332	M 3.3KOHM, J, 1/8W
R1128	ERJ8GCRYJ562	M 5.6KOHM, J, 1/8W	R1180	ERJ8GCRYJ104	M 100KOHM, J, 1/8W
R1129	ERJ8GCRYJ153	M 15KOHM, J, 1/8W	R1181	ERJ8GCRYJ562	M 5.6KOHM, J, 1/8W
R1130	ERJ8GCRYJ152	M 1.5KOHM, J, 1/8W	R1182	ERJ8GCRYJ272	M 2.7KOHM, J, 1/8W
R1131	ERJ8GCRYJ222	M 2.2KOHM, J, 1/8W	R1183	ERJ8GCRYJ393	M 39KOHM, J, 1/8W
R1132	ERJ8GCRYJ272	M 2.7KOHM, J, 1/8W	R1184	ERJ8GCRYJ202	M 2KOHM, J, 1/8W
R1133	ERJ8GCRYJ223	M 22KOHM, J, 1/8W	R1185	ERJ8GCRYJ223	M 22KOHM, J, 1/8W
R1134	ERJ8GCRYJ562	M 5.6KOHM, J, 1/8W	R1186	ERJ8GCRYJ272	M 2.7KOHM, J, 1/8W
R1135	ERJ8GCRYJ103	M 10KOHM, J, 1/8W	R1187	ERJ8GCRYJ472	M 4.7KOHM, J, 1/8W
R1136	ERJ8GCRYJ273	M 27KOHM, J, 1/8W	R1188	ERJ8GCRYJ391	M 390OHM, J, 1/8W
R1137	ERDS1FJ221	C 220OHM, J, 1/2W	R1189	ERJ8GCRYJ223	M 22KOHM, J, 1/8W
R1138	ERJ8GCRYJ182	M 1.8KOHM, J, 1/8W	R1190	ERJ8GCRYJ103	M 10KOHM, J, 1/8W
R1139	ERJ8GCRYJ103	M 10KOHM, J, 1/8W	R1191	ERJ8GCRYJ223	M 22KOHM, J, 1/8W
R1140	ERJ8GCRYJ103	M 10KOHM, J, 1/8W	R1192	ERJ8GCRYJ562	M 5.6KOHM, J, 1/8W
R1141	EVN64AA00B53	CH.BRIGHT 5KOHMB	R1193	ERJ8GCRYJ684	M 680KOHM, J, 1/8W
R1142	ERJ8GCRYJ223	M 22KOHM, J, 1/8W	R1194	ERJ8GCRYJ684	M 680KOHM, J, 1/8W
R1143	ERJ8GCRYJ123	M 12KOHM, J, 1/8W	R1195	ERJ8GCRYJ684	M 680KOHM, J, 1/8W
R1144	ERDS1FJ100	C 100HM, J, 1/2W	R1196	ERJ8GCRYJ102	M 1KOHM, J, 1/8W
R1145	ERJ8GCRYJ331	M 330OHM, J, 1/8W	R1197	ERJ8GCRYJ474	M 470KOHM, J, 1/8W
R1146	ERDS1FJ100	C 100HM, J, 1/2W	R1198	ERJ8GCRYJ471	M 470OHM, J, 1/8W
R1147	ERDS1FJ100	C 100HM, J, 1/2W	R1199	ERJ8GCRYJ564	C 560KOHM, J, 1/8W
R1148	ERJ8GCRYJ331	M 330OHM, J, 1/8W	R1200	ERD25FJ100	C 100HM, J, 1/4W
R1149	ERJ8GCRYJ123	M 12KOHM, J, 1/8W	R1201	ERD25FJ103	C 10KOHM, J, 1/4W
R1151	ERJ8GCRYJ123	M 12KOHM, J, 1/8W	R1202	ERD25TJ393	C 39KOHM, J, 1/4W
R1153	ERJ8GCRYJ123	M 12KOHM, J, 1/8W	R1203	ERD25FJ100	C 100HM, J, 1/4W
R1156	ERJ8GCRYJ153	M 15KOHM, J, 1/8W	R1204	ERD25TJ182	C 1.8KOHM, J, 1/4W
R1157	ERJ8GCRYJ472	M 4.7KOHM, J, 1/8W	R1205	ERD25TJ330	C 33OHM, J, 1/4W
R1159	ERJ8GCRYJ472	M 4.7KOHM, J, 1/8W	R1206	ERD25TJ471	C 470OHM, J, 1/4W
R1160	ERJ8GCRYJ392	M 3.9KOHM, J, 1/8W	R1207	ERD25TJ102	C 1KOHM, J, 1/4W
R1161	ERJ8GCRYJ103	M 10KOHM, J, 1/8W	R1208	ERD25TJ471	C 470OHM, J, 1/4W
R1162	ERJ8GCRYJ473	M 47KOHM, J, 1/8W	R1209	ERD25TJ102	C 1KOHM, J, 1/4W
R1163	ERJ8GCRYJ103	M 10KOHM, J, 1/8W	R1210	ERD25TJ181	C 180OHM, J, 1/4W
R1164	ERJ8GCRYJ102	M 1KOHM, J, 1/8W	R1211	ERD25TJ104	C 100KOHM, J, 1/4W
R1166	ERJ8GCRYJ153	M 15KOHM, J, 1/8W	R1212	ERD25TJ103	C 10KOHM, J, 1/4W
R1167	ERJ8GCRYJ104	M 100KOHM, J, 1/8W	R1213	ERD25TJ474	C 470KOHM, J, 1/4W
R1168	ERJ8GCRYJ101	M 100OHM, J, 1/8W	R1214	ERD25TJ223	C 22KOHM, J, 1/4W
R1169	ERJ8GCRYJ153	M 15KOHM, J, 1/8W	R1215	ERD25TJ102	C 1KOHM, J, 1/4W
R1170	ERJ8GCRYJ101	M 100OHM, J, 1/8W	R1216	ERD25TJ392	C 3.9KOHM, J, 1/4W
R1171	ERJ8GCRYJ223	M 22KOHM, J, 1/8W	R1217	ERD25FJ223	C 22KOHM, J, 1/4W
R1172	ERJ8GCRYJ103	M 10KOHM, J, 1/8W	R1218	ERD25FJ223	C 22KOHM, J, 1/4W
R1173	ERJ8GCRYJ622	M 6.2KOHM, J, 1/8W	R1219	ERD25TJ222	C 2.2KOHM, J, 1/4W
R1174	ERJ8GCRYJ103	M 10KOHM, J, 1/8W	R1220	ERD25FJ182	C 1.8KOHM, J, 1/4W
R1175	ERJ8GCRYJ103	M 10KOHM, J, 1/8W	R1221	ERD25TJ330	C 33OHM, J, 1/4W
R1176	ERJ8GCRYJ183	M 18KOHM, J, 1/8W			
R1177	ERJ8GCRYJ331	M 330OHM, J, 1/8W			



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R1222	ERD25TJ102	C 1KOHM, J, 1/4W	R1266	ERD25TJ471	C 470OHM, J, 1/4W
R1223	ERD25TJ223	C 22KOHM, J, 1/4W	R1267	ERD25TJ101	C 100OHM, J, 1/4W
R1224	ERD25TJ562	C 5.6KOHM, J, 1/4W	R1268	ERD25TJ101	C 100OHM, J, 1/4W
R1225	ERD25TJ471	C 470OHM, J, 1/4W	R1269	ERD25TJ330	C 33OHM, J, 1/4W
R1226	ERD25TJ102	C 1KOHM, J, 1/4W	R1290	ERJ8GCVJ153	M 15KOHM, J, 1/8W
R1227	ERD25TJ123	C 12KOHM, J, 1/4W	R1291	ERJ8GCVJ103	M 10KOHM, J, 1/8W
R1228	ERD25TJ102	C 1KOHM, J, 1/4W	R1292	ERJ8GCVJ102	M 1KOHM, J, 1/8W
R1229	ERD25TJ104	C 100KOHM, J, 1/4W	R1293	ERJ8GCVJ223	M 22KOHM, J, 1/8W
R1230	ERD25TJ272	C 2.7KOHM, J, 1/4W	R1294	ERJ8GCVJ223	M 22KOHM, J, 1/8W
R1231	ERD25TJ272	C 2.7KOHM, J, 1/4W	R1296	ERJ8GCVJ223	M 22KOHM, J, 1/8W
R1232	ERD25TJ102	C 1KOHM, J, 1/4W	R1297	ERJ8GCVJ563	M 56KOHM, J, 1/8W
R1233	ERD25TJ561	C 560OHM, J, 1/4W	R1299	ERJ8GCVJ471	M 470OHM, J, 1/8W
R1234	ERD25TJ472	C 4.7KOHM, J, 1/4W	ΔR1401	ERF2AK1R2	W 1.2OHM, K, 2W
R1235	ERD25TJ272	C 2.7KOHM, J, 1/4W	ΔR1402	ERDS1FJ392	C 3.9KOHM, J, 1/2W
R1236	ERD25TJ102	C 1KOHM, J, 1/4W	R1403	ERDS1FJ101	C 100OHM, J, 1/2W
R1237	ERD25TJ104	C 100KOHM, J, 1/4W	R1404	ERD25FJ101	C 100OHM, J, 1/4W
R1238	ERD25TJ473	C 47KOHM, J, 1/4W	R1406	ERD25FJ681	C 680OHM, J, 1/4W
R1239	ERD25TJ222	C 2.2KOHM, J, 1/4W	R1407	ERD25FJ271	C 270OHM, J, 1/4W
R1240	ERD25TJ122	C 1.2KOHM, J, 1/4W	ΔR1409	ERDS1TJ102	C 1KOHM, J, 1/2W
R1241	ERD25TJ102	C 1KOHM, J, 1/4W	ΔR1410	ERG2ANJ182H	M 1.8KOHM, J, 2W
R1242	ERD25FJ333	C 33KOHM, J, 1/4W	ΔR1411	ERD25TJ102	C 1KOHM, J, 1/4W
R1243	ERD25TJ334	C 330KOHM, J, 1/4W	ΔR1412	ERG1ANJ682H	M 6.8KOHM, J, 1W
R1244	ERD25FJ222	C 2.2KOHM, J, 1/4W	R1413	ERG3SJ332H	M 3.3KOHM, J, 3W
R1245	ERD25TJ683	C 68KOHM, J, 1/4W	R1415	ERX12SJR47P	M 0.47OHM, J, 1/2W
R1246	ERD25TJ473	C 47KOHM, J, 1/4W	R1416	ERD25TJ332	C 3.3KOHM, J, 1/4W
R1247	ERD25TJ102	C 1KOHM, J, 1/4W	ΔR1417	ERD25FJ471	C 470OHM, J, 1/4W
R1248	ERD25TJ272	C 2.7KOHM, J, 1/4W	ΔR1418	ERO25CKF8202	M 82KOHM, F, 1/4W
R1249	ERD25TJ393	C 39KOHM, J, 1/4W	ΔR1419	EVN38CA00B53	HV ADJ. 5KOHMB
R1250	ERD25TJ473	C 47KOHM, J, 1/4W	ΔR1420	ERO25CKF8061	M 8.06KOHM, F, 1/4W
R1251	ERD25TJ273	C 27KOHM, J, 1/4W	R1421	ERD25FJ471	C 470OHM, J, 1/4W
R1252	ERD25FJ333	C 33KOHM, J, 1/4W	R1422	ERDS1TJ393	C 39KOHM, J, 1/2W
R1253	ERD25TJ333	C 33KOHM, J, 1/4W	R1426	ERO25CKF7872	M 78.7KOHM, F, 1/4W
R1254	ERD25FJ101	C 100OHM, J, 1/4W	R1427	ERD25TJ223	C 22KOHM, J, 1/4W
R1255	ERD25TJ102	C 1KOHM, J, 1/4W	R1428	ERD25TJ272	C 2.7KOHM, J, 1/4W
R1256	ERD25TJ101	C 100OHM, J, 1/4W	R1429	ERO25CKF1001	M 1KOHM, F, 1/4W
R1257	ERD25TJ102	C 1KOHM, J, 1/4W	R1430	ERDS1FJ221	C 220OHM, J, 1/2W
R1258	ERD25TJ473	C 47KOHM, J, 1/4W	R1431	ERD25TJ272	C 2.7KOHM, J, 1/4W
R1259	ERD25TJ472	C 4.7KOHM, J, 1/4W	R1432	ERG1ANJ823H	M 82KOHM, J, 1W
R1260	ERD25FJ473	C 47KOHM, J, 1/4W	R1433	ERO50CKG8203	M 820KOHM, J, 1/2W
R1261	ERD25TJ472	C 4.7KOHM, J, 1/4W	R1435	ERD25TJ182	C 1.8KOHM, J, 1/4W
R1262	ERD25TJ103	C 10KOHM, J, 1/4W	R1436	ERD25TJ101	C 100OHM, J, 1/4W
R1263	ERD25FJ103	C 10KOHM, J, 1/4W	R1501	ERO25CKG8202	M 82KOHM, G, 1/4W
R1264	ERD25TJ681	C 680OHM, J, 1/4W	R1502	ERO25CKG1202	M 1.2KOHM, G, 1/4W
R1265	ERD25TJ471	C 470OHM, J, 1/4W	R1503	ERG1ANJ682H	M 6.8KOHM, J, 1W
			R1504	ERG1ANJ682H	M 6.8KOHM, J, 1W
			R1505	ERD25TJ563	C 56KOHM, J, 1/4W

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R1506	ERD25TJ681	C 680OHM, J, 1/4W	R1603	ERD25TJ104	C 100KOHM, J, 1/4W
R1507	ERD25TJ681	C 680OHM, J, 1/4W	R1604	ERD25TJ472	C 4.7KOHM, J, 1/4W
R1508	ERD25TJ153	C 15KOHM, J, 1/4W	R1605	ERD25TJ472	C 4.7KOHM, J, 1/4W
R1509	ERD25TJ181	C 180OHM, J, 1/4W	R1606	EVN64AA00B24	CONTROL 20KOHMB
R1510	ERDS1FJ681	C 680OHM, J, 1/2W	R1607	ERD25TJ103	C 10KOHM, J, 1/4W
R1513	ERD25TJ102	C 1KOHM, J, 1/4W	R1608	ERD25TJ121	C 120OHM, J, 1/4W
R1514	ERO25CKG8202	M 82KOHM, G, 1/4W	R1609	ERD25TJ102	C 1KOHM, J, 1/4W
R1515	ERO25CKG1202	M 1.2KOHM, G, 1/4W	R1610	ERD25TJ471	C 470OHM, J, 1/4W
R1516	ERG1ANJ682H	M 6.8KOHM, J, 1W	R1611	ERD25TJ101	C 100OHM, J, 1/4W
R1517	ERG1ANJ682H	M 6.8KOHM, J, 1W	R1612	ERD25TJ105	C 1MOHM, J, 1/4W
R1518	ERD25FJ563	C 56KOHM, J, 1/4W	R1613	ERD25TJ105	C 1MOHM, J, 1/4W
R1519	ERD25TJ681	C 680OHM, J, 1/4W	R1614	ERD25TJ103	C 10KOHM, J, 1/4W
R1520	ERD25TJ681	C 680OHM, J, 1/4W	R1615	ERG2ANJ823H	M 82KOHM, J, 2W
R1522	ERD25TJ153	C 15KOHM, J, 1/4W	R1616	ERG2ANJ823H	M 82KOHM, J, 2W
R1523	ERD25TJ181	C 180OHM, J, 1/4W	R1701	EVN64AA00B12	R. DRIVE 100OHMB
R1524	ERDS1FJ681	C 680OHM, J, 1/2W	R1702	ERD25TJ560	C 56OHM, J, 1/4W
R1525	ERD25FJ102	C 1KOHM, J, 1/4W	R1703	ERD25TJ390	C 39OHM, J, 1/4W
R1526	ERDS1FJ103	C 10KOHM, J, 1/2W	R1704	ERD25TJ472	C 4.7KOHM, J, 1/4W
R1528	ERD25TJ223	C 22KOHM, J, 1/4W	R1706	ERG5SJ752H	M 7.5KOHM, J, 5W
R1529	ERD25TJ272	C 2.7KOHM, J, 1/4W	R1707	ERDS1TJ153	C 15KOHM, J, 1/2W
R1530	ERD25TJ103	C 10KOHM, J, 1/4W	R1710	ERG5SJ752H	M 7.5KOHM, J, 5W
R1531	ERD25FJ223	C 22KOHM, J, 1/4W	R1712	ERDS1TJ151	C 150OHM, J, 1/2W
R1532	ERD25TJ272	C 2.7KOHM, J, 1/4W	R1713	ERD25FJ221	C 220OHM, J, 1/4W
R1533	ERD25TJ103	C 10KOHM, J, 1/4W	R1714	ERX1ANJ1R8H	M 1.8OHM, J, 1W
R1534	ERD25TJ272	C 2.7KOHM, J, 1/4W	R1715	ERDS1TJ104	C 100KOHM, J, 1/2W
R1535	ERD25TJ392	C 3.9KOHM, J, 1/4W	R1716	ERD25TJ334	C 330KOHM, J, 1/2W
R1536	EVN38CA00B24	RGB H. SIZE 20KOHMB	R1801	EVN64AA00B12	G. DRIVE 100OHMB
R1538	ERD25FJ473	C 47KOHM, J, 1/4W	R1802	ERD25TJ270	C 27OHM, J, 1/4W
R1539	ERD25FJ272	C 2.7KOHM, J, 1/4W	R1803	ERD25TJ390	C 39OHM, J, 1/4W
R1540	ERD25TJ392	C 3.9KOHM, J, 1/4W	R1804	ERD25TJ472	C 4.7KOHM, J, 1/4W
R1541	EVN38CA00B24	VIDEO H. SIZE 20KOHMB	R1806	ERG5SJ752H	M 7.5KOHM, 5W
R1543	ERDS1FJ103	C 10KOHM, J, 1/2W	R1807	ERDS1TJ153	C 15KOHM, J, 1/2W
R1547	ERG2ANJ220H	M 22OHM, J, 2W	R1810	ERG5SJ752H	M 7.5KOHM, 5W
R1551	ERD25FJ681	C 680OHM, J, 1/4W	R1812	ERDS1TJ151	C 150OHM, J, 1/2W
R1552	ERDS1FJ271	C 270OHM, J, 1/2W	R1813	ERD25FJ221	C 220OHM, J, 1/4W
R1553	ERG3SJ332H	M 3.3KOHM, J, 3W	R1814	ERX1ANJ1R8H	M 1.8OHM, J, 1W
△R1554	ERG2ANJ182H	M 1.8KOHM, J, 2W	R1815	ERDS1TJ104	C 100KOHM, J, 1/2W
R1556	ERX12SJR47P	M 0.47OHM, J, 1/2W	R1816	ERD25TJ334	C 330KOHM, J, 1/4W
R1557	ERG2ANJ391H	M 390OHM, J, 2W	R1901	EVN64AA00B12	B. DRIVE 100OHMB
R1558	ERD25TJ473	C 47KOHM, J, 1/4W	R1902	ERD35FJ270	C 27OHM, J, 1/4W
R1559	ERD25FJ562	C 5.6KOHM, J, 1/4W	R1903	ERD25TJ390	C 39OHM, J, 1/4W
R1560	ERF2AK1R2	W 1.2OHM, K, 2W	R1904	ERD25TJ472	C 4.7KOHM, J, 1/4W
R1601	ERD25TJ153	C 15KOHM, J, 1/4W	R1906	ERG5SJ752H	M 7.5KOHM, 5W
R1602	ERD25TJ473	C 47KOHM, J, 1/4W	R1907	ERDS1TJ153	C 15KOHM, J, 1/2W
			R1910	ERG5SJ752H	M 7.5KOHM, 5W
			R1912	ERDS1TJ151	C 150OHM, J, 1/2W
			R1913	ERD25FJ221	C 220OHM, J, 1/4W
			R1914	ERX1ANJ1R8H	M 1.8OHM, J, 1W
			R1915	ERDS1TJ104	C 100KOHM, J, 1/2W
			R1916	ERDS25TJ334	C 330KOHM, J, 1/4W

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
R3001	ER025CKF1502	M 15KOHM, F, 1/4W	R7030	ERJ8GICYJ154	C 150KOHM, J, 1/8W
R3002	EVJFLAEA4B15	COLOR 100KOHMB	R7031	ERJ8GICYJ393	C 39KOHM, J, 1/8W
R3003	ERD25FJ222	C 2.2KOHM, J, 1/4W	R7032	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W
R3004	ER025CKF1102	M 11KOHM, F, 1/4W	R7033	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R3005	ERD25FJ392	C 3.9KOHM, J, 1/4W	R7034	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W
R3006	EVJFLAEA4B14	TINT 10KOHMB	R7035	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R3007	ERD25FJ392	C 3.9KOHM, J, 1/4W	R7036	EVND4AA00B13	T/B PIN CORRECTION
R3008	ERD25FJ103	C 10KOHM, J, 1/4W			1KOHMB
R3009	EVJFMAEA4B53	BRIGHTNESS 5KOHMB	R7037	ERJ8GICYJ104	C 100KOHM, J, 1/8W
R3010	ERD25FJ822	C 8.2KOHM, J, 1/4W	R7038	ERJ8GICYJ102	M 1KOHM, J, 1/8W
R3011	EVJFLAEA4B14	CONTRAST 10KOHMB	R7040	ERJ8GICYJ101	M 100OHM, J, 1/8W
R3012	EVJFLAEA4B53	SHARPNESS 5KOHMB	R8001	EVJFLAEA4B14	R-V 10KOHMB
R3013	ERD25FJ473	C 47KOHM, J, 1/4W	R8002	EVJFLAEA4B14	R-H 10KOHMB
R3014	ERD25FJ473	C 47KOHM, J, 1/4W	R8003	EVJFLAEA4B14	B-V 10KOHMB
R3015	ERD25FJ104	C 100KOHM, J, 1/4W	R8004	EVJFLAEA4B14	B-H 10KOHMB
R3016	ERD25FJ104	C 100KOHM, J, 1/4W	R8007	ERDS1FJ151	C 150OHM, J, 1/2W
R3017	ERD25FJ273	C 27KOHM, J, 1/4W			
R3018	EVJFLAEA4B24	V. HOLD 20KOHMB	R8008	ERD25FJ182	C 1.8KOHM, J, 1/4W
R3019	ERD25FJ222	C 2.2KOHM, J, 1/4W	R8009	ERD25FJ332	C 3.3KOHM, J, 1/4W
R3020	ERD25FJ183	C 18KOHM, J, 1/4W	R8010	ERD25FJ392	C 3.9KOHM, J, 1/4W
R3021	ERD25FJ472	C 4.7KOHM, J, 1/4W	R8011	ERD25FJ392	C 3.9KOHM, J, 1/4W
R7005	EVND4H00GB24	G STATIC CONVERGENCE	R8012	ERD25FJ392	C 3.9KOHM, J, 1/4W
		20KOHMB			
R7006	EVND4H00GB24	G STATIC CONVERGENCE	R8013	ERD25FJ562	C 5.6KOHM, J, 1/4W
		20KOHMB	R8014	ERD25FJ183	C 18KOHM, J, 1/4W
R7008	ERDS1FJ151	C 150OHM, J, 1/2W	R8015	ERD25FJ183	C 18KOHM, J, 1/4W
R7009	ERDS1FJ151	C 150OHM, J, 1/2W	R8016	ERD25FJ183	C 18KOHM, J, 1/4W
R7010	ERDS1FJ151	C 150OHM, J, 1/2W	R8017	ERD25FJ183	C 18KOHM, J, 1/4W
R7011	EVND4H00GB24	H/L PIN. 20KOHMB	ΔR9001	ERF20HMK3R3	W 3.3OHM, 20W
R7012	EVND4H00RB24	B-H CONVERGENCE	ΔR9005	ERG2ANJ104H	M 100KOHM, J, 2W
		20KOHMB	R9006	ERD25FJ222	C 2.2KOHM, J, 1/4W
R7013	EVND4H00BB24	CONVERGENCE	ΔR9007	ERG2SJ102H	M 1KOHM, J, 2W
		20KOHMB	R9008	ERG3SJ822H	M 8.2KOHM, J, 3W
R7014	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R9009	ERD25FJ392	C 3.9KOHM, J, 1/4W
R7015	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R9010	ERD25FJ472	C 4.7KOHM, J, 1/4W
R7016	ERJ8GICYJ101	M 100OHM, J, 1/8W	R9011	ERD25FJ101	C 100OHM, J, 1/4W
R7017	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W	R9012	ERD50FJ104	C 100KOHM, J, 1/2W
R7018	ERJ8GICYJ222	M 2.2KOHM, J, 1/8W	R9013	ERD25FJ101	C 100OHM, J, 1/4W
R7019	ERJ8GICYJ472	M 4.7KOHM, J, 1/8W	R9014	ERD50TJ104	C 100KOHM, J, 1/4W
R7020	ERJ8GICYJ394	C 390KOHM, J, 1/8W	R9015	ERD25FJ221	C 220OHM, J, 1/4W
R7021	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R9016	ERD25FJ221	C 220OHM, J, 1/4W
R7022	ERJ8GICYJ103	M 10KOHM, J, 1/8W	R9101	ERD25FJ823	C 82KOHM, J, 1/4W
R7023	EVND4H00RB24	R-H CONVERGENCE	R9102	ERG1SJ331P	M 330OHM, J, 1W
		20KOHMB	R9103	ERD25FJ100	C 100OHM, J, 1/4W
R7024	EVND4H00BB24	B-H CONVERGENCE	R9104	ERD25TJ681	C 680OHM, J, 1/4W
		20KOHMB	R9203	ERD25FJ121	C 120OHM, J, 1/4W
R7025	ERDS1FJ101	C 100OHM, J, 1/2W	R9204	ERF2AKR68	W 0.68OHM, K, 2W
R7027	ERJ8GICYJ101	M 100OHM, J, 1/8W	R9205	ERG2SJ333H	M 33KOHM, J, 2W
R7028	ERJ8GICYJ101	M 100OHM, J, 1/8W	R9206	ERDS1FJ120	C 120OHM, J, 1/2W
R7029	ERJ8GICYJ682	M 6.8KOHM, J, 1/8W	R9207	ERG2SJ333H	M 33KOHM, J, 2W

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
△R9208	ERD75TAJ825	C 8.2MOHM, K, 1/2W	C27	ECEA1CU330	E 33UF, 16V
R9209	ERD25FJ393	C 39KOHM, J, 1/4W	C28	ECEA1CU330	E 33UF, 16V
R9210	ERD25TJ104	C 100KOHM, J, 1/4W	C29	ECEA1CU330	E 33UF, 16V
△R9212	ERQ12HKR27	F 0.27OHM, K, 1/2W	C30	ECEA1CU330	E 33UF, 16V
△R9213	ERQ12HKR56P	F 0.56OHM, K, 1/2W	C31	ECEA1CU101	E 100UF, 16V
△R9214	ERQ12HKR22	F 0.22OHM, K, 1/2W	C32	ECEA1CU101	E 100UF, 16V
△R9215	ERQ12HKR22	F 0.22OHM, K, 1/2W	C33	ECQM1H154KV	P 0.15UF, K, 50V
△R9216	ERQ12HKR27	F 0.27OHM, K, 1/2W	C34	ECQM1H154KV	P 0.15UF, K, 50V
			C35	ECQM1H154KV	P 0.15UF, K, 50V
R9218	ERDS1TJ473	C 47KOHM, J, 1/2W	C36	ECUX1H120JCM	C 12PF, J, 50V
R9303	ERD25FJ101	C 220OHM, J, 1/4W	C37	ECUX1H120JCM	C 12PF, J, 50V
R9304	ERD2AKR68	W 0.68OHM, K, 2W	C38	ECUX1H120JCM	C 12PF, J, 50V
R9305	ERG2SJ333H	M 33KOHM, J, 2W	C39	ECUX1H103KBM	C 0.01UF, K, 50V
△R9307	ERD25FJ121	C 120OHM, J, 1/4W	C40	ECUX1H103KBM	C 0.01UF, K, 50V
R9308	ERD25FJ393	C 39KOHM, J, 1/4W	C41	ECUX1H103KBM	C 0.01UF, K, 50V
R9309	ERD25TJ104	C 100KOHM, J, 1/4W	C42	ECEA1CU220	E 22UF, 16V
R9310	ERG2SJ333H	M 33KOHM, J, 2W	C43	ECEA1CU470	E 47UF, 16V
△R9311	ERD25FJ100	C 100OHM, J, 1/4W	C44	ECUX1H270JCM	C 27PF, J, 50V
R9313	ERDS1TJ473	C 47KOHM, J, 1/2W	C45	ECUX1H270JCM	C 27PF, J, 50V
R9401	ERDS1FJ121	C 120OHM, J, 1/2W	C46	ECUX1H270JCM	C 27PF, J, 50V
			C47	ECEA1CN220S	E 22UF, 16V
R9402	ERG3ANJ220H		C48	ECEA1CN220S	E 22UF, 16V
R9403	ERDS1FJ820	C 82OHM, J, 1/2W	C49	ECEA1CN220S	E 22UF, 16V
R9404	ERG3SJ220H	M 22OHM, J, 3W			
R9405	ERD25FJ221	C 220OHM, J, 1/4W	C51	ECUX1H103KBM	C 0.01UF, K, 50V
R9406	ERG3SJ100	M 100OHM, J, 3W	C53	ECUX1H103KBM	C 0.01UF, K, 50V
R9407	ERD25FJ221	C 220OHM, J, 1/4W	C55	ECUX1H103KBM	C 0.01UF, K, 50V
R9408	ERDS1FJ390	C 39OHM, J, 1/2W	C56	ECEA1CN330S	E 33UF, 16V
△R9501	ERC12ZGK105	S 1MOHM, J, 1/2W	C57	ECEA1CN330S	E 33UF, 16V
CAPACITORS			C58	ECEA1CN330S	E 33UF, 16V
C9	ECEA1CU470	E 47UF, 16V	C59	ECEA1EN100S	E 10UF, 25V
C10	ECEA1CN330S	E 33UF, 16V	C60	ECQM1H104KV	P 0.1UF, K, 50V
C11	ECEA1CN330S	E 33UF, 16V	C61	ECEA1HNO10S	E 1UF, 50V
C12	ECEA1CN330S	E 33UF, 16V	C62	ECEA1HNO10S	E 1UF, 50V
C16	ECEA1CU330	E 33UF, 16V			
C17	ECEA1CU330	E 33UF, 16V	C63	ECEA1CN100S	E 10UF, 16V
C18	ECEA1CU330	E 33UF, 16V	C64	ECEA1HN3R3S	E 3.3UF, 50V
C19	ECUX1H120JCM	C 12PF, J, 50V	C65	ECEA1CN330S	E 33UF, 16V
C20	ECUX1H120JCM	C 12PF, J, 50V	C66	ECEA1VU4R7	E 4.7UF, 35V
C21	ECUX1H120JCM	C 12PF, J, 50V	C67	ECUX1H390JCM	C 39PF, J, 50V
C22	ECEA1CU330	E 33UF, 16V	C68	ECUX1H471JCM	C 470PF, J, 50V
C23	ECEA1CU330	E 33UF, 16V	C69	ECEA1CU470	E 47UF, 16V
C24	ECEA1CU330	E 33UF, 16V	C70	ECEA1CU330	E 33UF, 16V
C25	ECEA1CU330	E 33UF, 16V	C71	ECEA1CU100	E 10UF, 16V
C26	ECEA1CU470	E 47UF, 16V	C72	ECEA1HU3R3	E 3.3UF, 50V
			C73	ECEA1HU3R3	E 3.3UF, 50V

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
C74	ECEA1HU3R3	E 3.3UF, 50V	C305	ECEA1EU221	E 220PF, 25V
C75	ECQM1H333JV	P 0.033UF, J, 50V	C306	ECEA1CU101	E 100UF, 16V
C76	ECUX1H471JCM	C 470PF, J, 50V	C307	ECEA1CU101	E 100UF, 16V
C77	ECEA1HU010	E 1UF, 50V	C308	ECEA1HU100	E 10UF, 50V
C78	ECEA1HU010	E 1UF, 50V	C309	ECEA1HU100	E 10UF, 50V
C80	ECUX1H223KBM	C 0.023UF, K, 50V	C311	ECUX1H103KBM	C 0.01UF, K, 50V
C81	ECUX1H221KBM	C 220PF, K, 50V	C312	ECEA1CU101	E 100UF, 16V
C82	ECEA1AU101	E 100UF, 10V	C313	ECUX1H103KBM	C 0.01UF, K, 50V
C83	ECUX1H680JCM	C 68PF, J, 50V	C315	ECEA1CN100S	E 10UF, 16V
C84	ECUX1H680JCM	C 68PF, J, 50V	C316	ECEA1HU010	E 1UF, 50V
C85	ECUX1H150JCM	C 15PF, J, 50V	C317	ECEA1CN100S	E 10UF, 16V
C86	ECUX1H221KBM	C 220PF, K, 50V	C318	ECEA1HU100	E 10UF, 50V
C87	ECEA1CN330S	E 33UF, 16V	C319	ECEA1HU100	E 10UF, 50V
C88	ECUX1H103KBM	C 0.01UF, K, 50V	C320	ECUX1H560JCM	C 56PF, J, 50V
C89	ECEA1AU101	E 100UF, 10V	C321	ECEA1HU3R3	E 3.3UF, 50V
C90	ECUX1H222KBM	C 2200PF, K, 50V	C322	ECUX1H103KBM	C 0.01UF, K, 50V
C91	ECQM1H334JV	P 0.33UF, J, 50V	C324	ECEA1CU330	E 33UF, 16V
C92	ECUX1H220JCM	C 22PF, J, 50V	C326	ECUX1H103KBM	C 0.01UF, K, 50V
C93	ECUX1H472KBM	C 4700PF, K, 50V	C328	ECEA1CU330	E 33UF, 16V
C94	ECUX1H222KBM	C 2200PF, K, 50V	C330	ECUX1H103KBM	C 0.01UF, K, 50V
C95	ECUX1H681JCM	C 680PF, J, 50V	C332	ECEA1CU330	E 33UF, 16V
C96	ECEA1HU2R2	E 2.2UF, 50V	C334	ECUX1H103KBM	C 0.01UF, K, 50V
C97	ECQM1H683KV	P 0.068UF, K, 50V	C335	ECUX1H220JCM	E 22PF, 50V
C98	ECQM1H473KV	P 0.047UF, K, 50V	C336	ECUX1H271JCM	C 270PF, J, 50V
C99	ECUX1H680JCM	C 68PF, J, 50V	C337	ECUX1H820JCM	C 82PF, J, 50V
C201	ECUX1H102KBM	C 1000PF, K, 50V	C341	ECEA1CN220S	E 22UF, 16V
C202	ECEA1EU470	E 47UF, 25V	C342	ECUX1H103KBM	C 0.01UF, K, 50V
C203	ECEA1EU101	E 100UF, 25V	C350	ECEA1CU331	E 330UF, 16V
C204	ECEA1EU470	E 47UF, 25V	C403	ECEA1CU100	E 10UF, 16V
C205	ECUX1H102KBM	C 1000PF, K, 50V	C404	ECEA50ZR68	E 0.68UF, 50V
C206	ECUX1H102KBM	C 1000PF, K, 50V	C405	ECKF1H681KB	C 680PF, K, 50V
C207	ECEA1EU470	E 47UF, 25V	C406	ECQM1H393KV	P 0.039UF, K, 50V
C209	ECEA1EU101	E 100UF, 25V	C407	ECSZ16EF2R2V	T 2.2UF, 16V
C210	ECUX1H102KBM	C 1000PF, K, 50V	C408	ECQM1H222KV	P 2200PF, K, 50V
C211	ECEA1EU470	E 47UF, 25V	C409	ECEA1EU331	E 330UF, 25V
C212	ECEA1EU101	E 100UF, 25V	C410	ECEA1EU101	E 100UF, 25V
C213	ECEA1EU470	E 47UF, 25V	C411	ECEA1VU330	E 33UF, 35V
C214	ECUX1H102KBM	C 1000PF, K, 50V	C412	ECSZ25EF4R7N	T 4.7UF, 25V
C215	ECEA1EU101	E 100UF, 25V	C413	ECEA50Z4R7	E 4.7UF, 50V
C216	ECUX1H102KBM	C 1000PF, K, 50V	C414	ECEA1VU4R7	E 4.7UF, 35V
C217	ECEA1EU470	E 47UF, 25V	C415	ECSZ25EF3R3N	T 3.3UF, 25V
C301	ECEA1CN330S	E 33UF, 16V	C416	ECSZ25EF2R2N	T 2.2UF, 25V
C302	ECEA1CN330S	E 33UF, 16V	C417	ECEA1CU101	E 100UF, 16V
C303	ECEA1CN220S	E 22UF, 16V	C418	ECQM1H104KV	P 0.1UF, K, 50V
C304	ECUX1H220JCM	E 22PF, 50V			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
C451	ECEA2CG4R7S	E 4.7UF, 160V	C604	ECUX1H101JCM	C 100PF, J, 50V
C452	ECEA1HU4R7	E 4.7UF, 50V	C605	ECUX1H150JCM	C 15PF, J, 50V
C453	ECEA50ZR22	E 0.22UF, 50V	C606	ECUX1H151JCM	C 150PF, J, 50V
C454	ECEA2AU331	E 330UF, 100V	C607	ECUX1H103KBM	C 0.01UF, K, 50V
C455	ECEA2CS330	E 33UF, 160V	C608	ECQM1H272JV	P 2700PF, J, 50V
C456	ECKD2H103PE2	C 0.01UF, P, 500V	C609	ECUX1H103KBM	C 0.01UF, K, 50V
C457	ECEA1EN4R7S	E 4.7UF, 25V	C610	ECUX1H330JCM	C 33PF, J, 50V
C458	ECQE2474KZ	P 0.47UF, K, 250V	C611	ECUX1H470JCM	C 47PF, J, 50V
C481	ECEA1CN100S	E 10UF, 16V	C612	ECUX1H100DCM	C 10PF, D, 50V
C482	ECEA1CU470	E 47UF, 16V	C613	TCRHA070G11	TRIMMER
C483	ECKF1H102KB	C 1000PF, K, 50V	C614	ECEA50ZR15	E 0.15UF, 50V
C484	ECKF1H102KB	C 1000PF, K, 50V	C615	ECQM1H822KV	P 8200PF, K, 50V
C485	ECEA1HNO10S	E 1UF, 50V	C616	ECEA1EN3R3S	E 3.3UF, 25V
C486	ECEA1EN100S	E 10UF, 25V	C617	ECUX1H102KBM	C 1000PF, K, 50V
C503	ECQM1H104KV	P 0.1UF, K, 50V	C618	ECUX1H060DCM	C 6PF, D, 50V
C504	ECQM1H223KV	P 0.022UF, K, 50V	C619	ECUX1H221KBM	C 220PF, K, 50V
C505	ECEA1HU3R3	E 3.3UF, 50V	C620	ECUX1H680JCM	C 68PF, J, 50V
C506	ECQM1H103KV	P 0.01UF, K, 50V	C621	ECQM1H273KV	P 0.027UF, K, 50V
C511	ECQF6182KZ	P 1800PF, K, 600V	C622	ECUX1H221KBM	C 220PF, K, 50V
C512	ECQM1H682KV	P 6800PF, K, 50V	C623	ECUX1H103KBM	C 0.01UF, K, 50V
C513	ECEA1CU100	E 10UF, 16V	C624	ECEA1HUR47	E 0.47UF, 50V
C514	ECEA1CU470	E 47UF, 16V	C625	ECUX1H103KBM	C 0.01UF, K, 50V
C515	ECEA1CU220	E 22UF, 16V	C626	ECEA1CU101	E 100UF, 16V
C516	ECEA1CN100S	E 10UF, 16V	C627	ECUX1H821JCM	C 820PF, J, 50V
C517	ECEA25Z3R3	E 3.3UF, 25V	C628	ECEA1HU4R7	E 4.7UF, 50V
△C518	ECEA1HU010	E 1UF, 50V	C629	ECQM1H104KV	P 0.1UF, K, 50V
C519	ECUX1H103KBM	C 0.01UF, K, 50V	C630	ECEA1HU010	E 1UF, 50V
C520	ECUX1H103KBM	C 0.01UF, K, 50V	C631	ECUX1H121JCM	C 120PF, J, 50V
C551	ECEA1CN100S	E 10UF, 16V	C632	ECUX1H180JCM	C 18PF, J, 50V
C552	ECKF1H102KB	C 1000PF, K, 50V	C633	ECUX1H221JCM	C 220PF, J, 50V
C553	ECKF1H102KB	C 1000PF, K, 50V	C634	ECQM1H103KV	P 0.01UF, K, 50V
C554	ECKF1H103ZF	C 0.01UF, Z, 50V	C635	ECUX1H103KBM	C 0.01UF, K, 50V
C555	ECEA1CU100	E 10UF, 16V	C636	ECUX1H101JCM	C 100PF, J, 50V
C556	ECQM1H272JV	P 2700PF, J, 50V	C637	ECSZ16EF33V	T 33UF, 16V
C558	ECKF1H562KB	C 5600PF, K, 50V	C638	ECQM1H104KV	P 0.1UF, K, 50V
C559	ECEA1CU100	E 10UF, 16V	C639	ECUX1H331JCM	C 330PF, J, 50V
C560	ECEA1CU220	E 22UF, 16V	C640	ECEA1HU100	E 10UF, 50V
C561	ECEA1CU100	E 10UF, 16V	C641	ECUX1H103KBM	C 0.01UF, K, 50V
C562	ECEA1CU220	E 22UF, 16V	C642	EVUX1H220JCM	C 22PF, 50V
C563	ECEA1CN100S	E 10UF, 16V	C643	ECUX1H331KBM	C 330PF, K, 50V
C564	ECQM1H392JV	P 3900PF, J, 50V	C644	ECUX1H821KBM	C 820PF, K, 50V
C601	ECUX1H470JCM	C 47PF, J, 50V	C645	ECUX1H331KBM	C 330PF, K, 50V
C602	ECUX1H330JCM	C 33PF, J, 50V	C646	ECEA1HU4R7	E 4.7UF, 50V
C603	ECUX1H470JCM	C 47PF, J, 50V	C647	ECEA1HU010	E 1UF, 50V
			C648	EVUX1H220JCM	E 22PF, 50V

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
C649	ECUX1H221KBM	C 220PF, K, 50V	C732	ECCF1H150J	C 15PF, J, 50V
C650	ECQM1H103KV	P 0.01UF, K, 50V	C733	ECEA1CU100	E 10UF, 16V
C651	ECQM1H103KV	P 0.01UF, K, 50V	C735	ECEA1CU100	E 10UF, 16V
C652	ECUX1H121JCM	C 120PF, J, 50V	C736	ECQM1H473KV	P 0.047UF, K, 50V
C653	ECUX1H103KBM	C 0.01UF, K, 50V	C738	ECQM1H473KV	P 0.047UF, K, 50V
C654	ECQM1H474KV	P 0.47UF, K, 50V			
C655	ECUX1H102KBM	C 1000PF, K, 50V	C739	ECEAOJU101	E 100UF, 6.3V
C656	ECUX1H121JCM	C 120PF, J, 50V	C740	ECEA1CU100	E 10UF, 16V
C657	ECUX1H331KBM	C 330PF, K, 50V	C741	ECEA1CU100	E 10UF, 16V
C658	ECUX1H103KBM	C 0.01UF, K, 50V	C744	ECEA1CN100S	E 10UF, 16V
C671	ECEA1HU100	E 10UF, 50V	C745	ECEA1CU100	E 10UF, 16V
C672	ECQM1H103KV	P 0.01UF, K, 50V	C746	ECEA1CU100	E 10UF, 16V
C673	ECEA1HU3R3	E 3.3UF, 50V	C747	ECEA1CU101	E 100UF, 16V
C674	ECUX1H103KBM	C 0.01UF, K, 50V	C748	ECEA1HU010	E 1UF, 50V
C675	ECQM1H183KV	P 0.018UF, K, 50V	C749	ECEAOJU470	E 47UF, 6.3V
C676	ECQM1H393KV	P 0.039UF, K, 50V			
C677	ECQM1H473KV	P 0.047UF, K, 50V	C751	ECEAOJU470	E 47UF, 6.3V
C678	ECEA1CU330	E 33UF, 16V	C752	ECEA1CU100	E 10UF, 16V
C679	ECEA1CU330	E 33UF, 16V	C755	ECEA1CN470S	E 47UF, 16V
C680	ECEA1CU330	E 33UF, 16V	C756	ECEA1HU010	E 1UF, 50V
C701	ECEA1VU220	E 22UF, 35V	C757	ECEA1EN3R3S	E 3.3UF, 25V
C703	ECEA1HNO10S	E 1UF, 50V	C758	ECEA1EN3R3S	E 3.3UF, 25V
C704	ECEA1VU220	E 22UF, 35V	C762	ECEA1CN100S	E 10UF, 16V
C705	ECEA1VU101	E 100UF, 35V	C763	ECQM1H104KV	P 0.1UF, K, 50V
C706	ECQM1H104KV	P 0.1UF, K, 50V	C764	ECEA1CU470	E 47UF, 16V
C707	ECEA1HU010	E 1UF, 50V	C765	ECUX1H561KBM	C 560PF, K, 50V
C708	ECQM1H333KV	P 0.033UF, K, 50V	C766	ECEA1HNO10S	E 1UF, 50V
C709	ECEA1HU010	E 1UF, 50V	C767	ECQM1H103KV	P 0.01UF, K, 50V
C710	ECEA1HNO10S	E 1UF, 50V	C768	ECQM1H102KV	P 1000PF, K, 50V
C711	ECCF1H680J	C 68PF, J, 50V	C769	ECEA1VU100	E 10UF, 35V
C712	ECEA1HNO10S	E 1UF, 50V	C770	ECQM1H104KV	P 0.1UF, K, 50V
C716	ECEA1HU010	E 1UF, 50V	C771	ECEA1HN2R2S	2.2UF, 50V
C717	ECEA1EU100	E 10UF, 25V	C981	ECEA1VU220	E 22UF, 35V
C718	ECEA1HU010	E 1UF, 50V	C982	ECEA1CU220	E 22UF, 16V
C719	ECQM1H104KV	P 0.1UF, K, 50V	C983	ECEA1CU100	E 10UF, 16V
C720	ECEA1HNO10S	E 1UF, 50V	C984	ECEA1CU220	E 22UF, 16V
C721	ECQM1H104KV	P 0.1UF, K, 50V	C985	ECEA1VU100	E 10UF, 35V
C722	ECEA1HU010	E 1UF, 50V	C986	ECEA1VU100	E 10UF, 35V
C723	ECEA1CU100	E 10UF, 16V	C987	ECEA1EU470	E 47UF, 25V
C724	ECQM1H104KV	P 0.1UF, K, 50V	C988	ECEA1EU470	E 47UF, 25V
C725	ECEA1CU101	E 100UF, 16V	C989	ECEA1HU010	E 1UF, 50V
C726	ECEA1HU010	E 1UF, 50V	C990	ECEA1HU010	E 1UF, 50V
C727	ECEA1HU010	E 1UF, 50V	C991	ECEA1HU010	E 1UF, 50V
C730	ECQM1H473KV	P 0.047UF, K, 50V	C992	ECEA1CN100S	E 10UF, 16V
C731	ECEA1EU221	E 220PF, 25V	C993	ECEA1CN100S	E 10UF, 16V
			C994	ECEA1CU100	E 10UF, 16V



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
C1001	ECEA1CU100	E 10UF, 16V	C1418	ECQE12683KZ	P 0.068UF, K, 1.2KV
C1004	ECEA1CU101	E 100UF, 16V	C1420	ECEA1VU101	E 100UF, 35V
C1005	ECEA1CU101	E 100UF, 16V	C1501	ECEA1CN330S	E 33UF, 16V
C1006	ECEA1AU101	E 100UF, 10V	C1502	ECQM1H333KV	P 0.033UF, K, 50V
C1007	ECEA1CU101	E 100UF, 16V	C1503	ECEA1VU220	E 22UF, 35V
			C1504	ECEA1CU331	E 330UF, 16V
C1008	ECEA1EU470	E 47UF, 25V			
C1010	ECKF1H103ZF	C 0.01UF, Z, 50V	C1505	ECQM1H333KV	P 0.033UF, K, 50V
C1011	ECEA2ES100	E 10UF, 250V	C1506	ECEA1HU100	E 10UF, 50V
C1012	ECEA1CU100	E 10UF, 16V	C1507	ECEA1CN100S	E 10UF, 16V
C1013	ECEA1CU330	E 33UF, 16V	C1508	ECQM1H333KV	P 0.033UF, K, 50V
			C1509	ECQM1H333KV	P 0.033UF, K, 50V
C1201	ECEA1CN330S	E 33UF, 16V			
C1202	ECEA1CN220S	E 22UF, 16V	C1510	ECEA1VU220	E 22UF, 35V
C1203	ECEA1HNO10S	E 1UF, 50V	C1511	ECEA1CU331	E 330UF, 16V
C1204	ECEA1HU010	E 1UF, 50V	C1512	ECEA1HU4R7	E 4.7UF, 50V
			C1513	ECKF1H103ZF	C 0.01UF, Z, 50V
C1205	ECEA1CN100S	E 10UF, 16V	C1514	ECKF1H103ZF	C 0.01UF, Z, 50V
C1206	ECEA1HU4R7	E 4.7UF, 50V	C1515	ECEA2CS100	E 10UF, 160V
C1207	ECEA1CU101	E 100UF, 16V	C1516	ECEA2CS3R3	E 3.3UF, 160V
C1208	ECEA1CU470	E 47UF, 16V	C1517	ECEA2CS330	E 33UF, 160V
C1209	ECEA1EN4R7S	E 4.7UF, 25V	C1518	ECEA2CS100	E 10UF, 160V
C1210	ECEA1CU470	E 47UF, 16V	C1519	ECEA2CS3R3	E 3.3UF, 160V
C1211	ECCF1H121JP	C 120PF, J, 50V	C1521	ECQE2105KS	P 1UF, K, 250V
C1212	ECEA1CN220S	E 22UF, 16V	C1522	ECEAOJU222	E 2200UF, 6.3V
C1213	ECEA1CN330S	E 33UF, 16V	C1523	ECQV1H474JZ	P 0.47UF, J, 50V
C1214	ECEA1CN330S	E 33UF, 16V	C1524	ECQM1H333KV	P 0.033UF, K, 50V
C1215	ECEA1HNO10S	E 1UF, 50V	C1551	ECKD2H182KB2	C 1800PF, K, 500V
C1216	ECEA1CU101	E 100UF, 16V	C1552	ECKD3D222JBN	C 2200PF, J, 2KV
C1217	ECKF1H103ZF	C 0.01UF, Z, 50V	C1553	ECQM1H273KV	P 0.027UF, K, 50V
C1282	ECUX1H681JCM	C 680PF, J, 50V	C1555	ECWH12H682JS	P 6800PF, J, 1.2KV
C1401	ECES2CV221S	E 220UF, 160V	C1556	ECQE2105KS	P 1UF, K, 250V
C1402	ECEA1VU102	E 1000UF, 35V	C1557	ECQE2105KS	P 1UF, K, 250V
C1403	ECKD2H182KB2	C 1800PF, K, 500V	C1558	ECQM1H273KV	P 0.027UF, K, 50V
C1404	ECEA1CU102	E 1000UF, 16V	C1559	ECEA1HU100	E 10UF, 50V
C1405	ECQE2475KS	P 4.7UF, K, 250V	C1560	ECKF1H152KB	C 1500PF, K, 50V
C1406	ECEA1VU4R7	E 4.7UF, 35V	C1561	ECEA1HU100	E 10UF, 50V
C1407	ECKF1H472ZF	C 4700PF, Z, 50V	C1562	ECQM1104KZ	P 0.1UF, K, 100V
C1408	ECQE2104KS	P 0.1UF, K, 250V	C1601	ECEA1EN100S	E 10UF, 25V
C1409	ECKD2H151KB2	C 150PF, K, 500V	C1602	ECEA1VU100	E 10UF, 35V
C1411	ECEA1HUR47	E 0.47UF, 50V	C1603	ECEA1EN100S	E 10UF, 25V
C1412	ECQE2474MS	P 0.47UF, M, 250V	C1604	ECEA1EU220	E 22UF, 25V
C1413	ECEA2ES4R7	E 4.7UF, 250V	C1701	ECKF1H103ZF	C 0.01UF, Z, 50V
△C1414	ECKD3D222JBN	C 2200PF, J, 2KV	C1702	ECCF1H471J	C 470PF, J, 50V
△C1415	ECKD3D222JBN	C 2200PF, J, 2KV	C1703	ECCF1H561J	C 560PF, J, 50V
△C1416	ECKD3D222JBN	C 2200PF, J, 2KV	C1704	ECKD2H103MD2	C 0.01UF, M, 500V
C1417	ECQE10683KU	P 0.068UF, K, 1KV	C1705	ECKD3D222JBN	C 2200PF, J, 2KV

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
C1707	ECEA2ESO10	E 1UF, 250V	C9223	ECEA1CU222	E 2200UF, 16V
C1801	ECKF1H103ZF	C 0.01UF, Z, 50V	△C9224	ECEA2CS101	E 100UF, 160V
C1802	ECCF1H471J	C 470PF, J, 50V	C9225	ECKD2H472PE8	C 4700PF, P, 500V
C1803	ECCF1H561J	C 560PF, J, 50V	C9226	ECKF1H101KB	C 100PF, K, 50V
C1804	ECKD2H103MD2	C 0.01UF, M, 500V			
C1805	ECKD3D222JBN	C 2200PF, J, 2KV	C9227	ECEA1CU222	E 2200UF, 16V
C1807	ECEA2ESO10	E 1UF, 250V	C9228	ECKF1H472KB	C 4700PF, K, 50V
C1901	ECKF1H103ZF	C 0.01UF, Z, 50V	C9229	ECEA2WS2R2	E 2.2UF,
C1902	ECCF1H471J	C 470PF, J, 50V	△C9230	ECKDNS102MBX	C 1000PF,
C1903	ECCF1H561J	C 560PF, J, 50V	△C9231	ECKDNS222MEX	C 2200PF,
C1904	ECKD2H103MD	C 0.01UF, M, 500V	C9232	ECKF1H682KB	C 6800PF, K, 50V
C1905	ECKD3D222JBN	C 2200PF, J, 2KV	C9233	ECKF1H102KB	C 1000PF, K, 50V
C1907	ECEA2ESO10	E 1UF, 250V	C9301	ECQM4223KZ	P 0.022UF, K, 400V
C3001	ECKF1H103ZF	C 0.01UF, Z, 50V	C9302	ECEA1CU221	E 220UF, 16V
△C9001	ECKD2H472PE8	C 4700PF, 500V	C9303	ECEA1CU101	E 100UF, 16V
△C9002	ECKD2H472PE8	C 4700PF, 500V	C9305	ECKD2H272KB2	C 2700PF, K, 500V
△C9003	ECKD2H472PE8	C 4700PF, 500V	C9306	ECEA1AU331	E 330UF, 10V
△C9004	ECKD2H472PE8	C 4700PF, 500V	C9307	ECKD3D101KBN	C 100PF, K, 2KV
△C9005	ECES2GU221T	E 220UF, 400V	C9308	ECKD3D101KBN	C 100PF, K, 2KV
△C9006	ECES2GU221T	E 220UF, 400V			
C9008	ECKF1H472KB	C 4700PF, K, 50V	C9309	ECKD2H102KB2	C 1000PF, K, 500V
△C9010	ECQE6334KZ	P 0.33UF, M, 600V	C9310	ECKD3A221KBN	C 220PF, 1KV
C9101	ECEA1VU331	E 330UF, 35V	△C9311	ECES2CG471M	E 470UF, 160V
C9102	ECKF1H103ZF	C 0.01UF, Z, 50V	C9312	ECKD2H472PE8	C 4700PF, P, 500V
C9201	ECQM4223KZ	P 0.022UF, K, 400V	C9313	ECKF1H222KB	C 2200PF, K, 50V
C9202	ECEA1CU221	E 220UF, 16V	C9314	ECKF1H101KB	C 100PF, K, 50V
C9203	ECEA1CU470	E 47UF, 16V	△C9315	ECEA1EU331	E 330UF, 25V
C9205	ECKD2H272KB2	C 2700PF, K, 500V	C9316	ECKF1H102KB	C 1000PF, K, 50V
C9206	ECEA1AU331	E 330UF, 10V	C9317	ECEA2WS4R7	E 4.7UF, 450V
C9207	ECKD3D101KBN	C 100PF, K, 2KV	C9401	ECEA1EU100	E 10UF, 25V
C9208	ECKD3D101KBN	C 100PF, K, 2KV	C9402	ECEA1EU102	E 1000UF, 25V
C9209	ECKF1H101KB	C 100PF, K, 50V	C9403	ECEA1EU100	E 10UF, 25V
C9211	ECKD2H101KB2	C 100PF, K, 500V	C9404	ECEA1EU102	E 1000UF, 25V
C9212	ECKF1H101KB	C 100PF, K, 50V	C9405	ECEA1CU100	E 10UF, 16V
C9213	ECKF1H101KB	C 100PF, K, 50V	C9406	ECEA1CU102	E 1000UF, 16V
C9214	ECKD3A101KBN	C 100PF, 1KV	C9407	ECEA1VU331	E 330UF, 35V
△C9215	ECEA1EG222S	E 2200UF, 25V	△C9501	ECQE6334KZ	P 0.33UF, 600V
C9216	ECKF1H472KB	C 4700PF, K, 50V	△C9502	ECKDNS102MBX	C 1000PF, 600V
			△C9503	ECKDNS102MBX	C 1000PF, 600V
△C9217	ECEA2ES220	E 22UF, 250V	COILS		
C9218	ECKD2H472PE8	C 4700PF, P, 500V	L201	TLP408	FERRITE CORE
C9219	ECEA1VG221S	E 220UF, 35V	L202	TLP408	FERRITE CORE
C9220	ECKF1H472KB	C 4700PF, K, 50V	L203	TLP408	FERRITE CORE
△C9221	ECEA1EU222	E 2200UF, 25V	L204	TLP408	FERRITE CORE
			L205	TLP408	FERRITE CORE
C9222	ECKF1H472KB	C 4700PF, K, 50V	L206	TLP408	FERRITE CORE

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
L301	EFDMA645B85F	DELAY LINE	ΔL9001	TLP13514V	FILTER
L302	TLK158064	CHROMA IF TRANS.	ΔL9003	TSK1004	COIL
L303	TLK860-1	DELAY LINE, VIDEO	L9208	TSC925-4	CHOKE COIL
L304	TLX820J166C	PEAKING COIL	L9209	TLQ100J126	PEAKING COIL 10U
L305	TLT180K991K	PEAKING COIL 18U	L9212	TLT300K119C	PEAKING COIL
L401	TLT221K991K	PEAKING COIL 220U	L9213	TSC925-4	CHOKE COIL
L601	TLT150J991K	PEAKING COIL 15U	L9215	TLQ100K126	PEAKING COIL 10U
L602	TLT120J991K	PEAKING COIL 12U	L9301	TSC925-4	CHOKE COIL
L603	TLT681K991K	PEAKING COIL 680U	L9302	TSC925-4	CHOKE COIL
L604	TLT820J991K	PEAKING COIL 82U	L9305	TLQ120J126	PEAKING COIL 12U
L605	TLT100J991K	PEAKING COIL 10U	L9306	TLQ100J126	PEAKING COIL 10U
L606	TLT681K991K	PEAKING COIL 680U	ΔL9501	TLP13514V	
L607	TLT512J166C	PEAKING COIL 5.1M	TRANSFORMERS		
L608	TLT681K991K	PEAKING COIL 680U	T1401	TLH6433	H DRIVE TRANS.
L609	TLT390K991K	PEAKING COIL 39U	ΔT1402	TLF14582F1	FLYBACK TRANS
L610	TLT047K991K	PEAKING COIL 4.7U	T1551	TLH6433	H DRIVE TRANS.
L611	TLK61008	HI-PEAKER TRANS.	T1552	TLH15808	COIL
L612	TLT150K991K	PEAKING COIL 15U	ΔT9101	ETP41D103E	REMOCON TRANS
L613	TLT100K991K	PEAKING COIL 10U	ΔT9201	ETS49K250A	SWITCHING TRANS
L614	TLT121K991K	PEAKING COIL 120U	T9202	TLP15724	CHOPPER TRANS.
L615	TLK155053	CHROMA IF TRANS.	ΔT9301	ETS49K251A	SWITCHING TRANS
L616	TLT150K991K	PEAKING COIL 15U	T9302	TLP15724	CHOPPER TRANS.
L617	TLK158066	1H MATCHING COIL	DIODES		
L618	TLQ082J205C	PEAKING COIL 8.2U	D9	MA151K	DIODE
L619	TLK61008	HI-PEAKER TRANS.	D10	MA151K	DIODE
L620	TLK61008	HI-PEAKER TRANS.	D11	MA151K	DIODE
L621	EFDEN645A11G	DELAY LINE	D12	MA151K	DIODE
L622	TLK66056-1	CHROMA TRANS.	D14	MA151K	DIODE
L1201	TLT542K991K	PEAKING COIL 5.4M	D15	MA151WK	DIODE
L1401	TLT030L119C	PEAKING COIL 3U	D16	MA1068	ZENER DIODE
L1402	TSC911	BEAD CHOKE	D17	MA151WK	DIODE
L1501	TLT152K139G	PEAKING COIL 1.5M	D18	MA1068	ZENER DIODE
L1551	TLT030L119C	PEAKING COIL 3U	D19	MA151WK	DIODE
L1552	TLH6663P	LINEALITY COIL	D20	MA1068	ZENER DIODE
L1553	TSC911	BEAD CHOKE	D21	MA1110M	ZENER DIODE
L1701	TLQ470J126	PEAKING COIL 47U	D22	MA151K	DIODE
L1702	TLQ120J126	PEAKING COIL 12U	D23	MA151K	DIODE
L1703	TLQ101K126	PEAKING COIL 100U	D24	MA1068	ZENER DIODE
L1801	TLQ470K126	PEAKING COIL 47U	D25	MA1036	ZENER DIODE
L1802	TLQ120J126	PEAKING COIL 12U	D26	MA151WK	DIODE
L1803	TLQ101K126	PEAKING COIL 100U	D27	MA151K	DIODE
L1901	TLQ470K126	PEAKING COIL 47U	D28	MA151K	DIODE
L1902	TLQ120J126	PEAKING COIL 12U			
L1903	TLQ101K126	PEAKING COIL 100U			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
D30	MA151K	DIODE	D601	MA156	DIODE
D31	MA151K	DIODE	D602	MA151K	DIODE
D32	MA151K	DIODE	D603	MA151K	DIODE
D33	MA151K	DIODE	D604	MA162	DIODE
D34	MA151K	DIODE	D606	MA27WA	DIODE
D35	MA151K	DIODE	D671	MA151K	DIODE
D36	MA151K	DIODE	D672	MA151K	DIODE
D37	MA151K	DIODE	D673	MA151K	DIODE
D38	MA151K	DIODE	D674	MA151K	DIODE
D39	MA151K	DIODE	D675	OA91	DIODE
D40	MA151K	DIODE	D676	MA151WK	DIODE
D41	TVSQB106R	ZENER DIODE	D701	MA151K	DIODE
D42	MA151K	DIODE	D706	MA162	DIODE
D43	MA151K	DIODE	D710	TVSRD6.2EB	ZENER DIODE
D45	MA151WK	DIODE	D712	TVSQA206C	ZENER DIODE
D46	MA151WK	DIODE	D713	MA162	DIODE
D47	MA151WK	DIODE	D714	TVSRD2.7EB1	ZENER DIODE
D48	MA151K	DIODE	D715	TVSRD2.7EB1	ZENER DIODE
D301	OA90G	DIODE	D716	MA162	DIODE
D302	MA27WA	DIODE	D717	MA162	DIODE
D303	MA151K	DIODE	D718	MA162	DIODE
D305	MA27T-A	DIODE	D719	MA151A	DIODE
D306	MA151WK	DIODE	D720	MA28T-A	DIODE
D307	MA151K	DIODE	D721	MA28T-A	DIODE
D310	MA28W	DIODE	D722	MA151WA	DIODE
D401	MA154WK	DIODE	D723	TVSRD6.2EB	ZENER DIODE
D402	MA154WK	DIODE	D724	MA151K	DIODE
D403	MA154WK	DIODE	D725	MA151K	DIODE
D404	MA28T-A	DIODE	D726	TVSQA211D	DIODE
D405	MA28T-A	DIODE	D727	TVSRD9.1EB	ZENER DIODE
D406	MA151K	DIODE	D728	TVSQA206C	ZENER DIODE
D407	MA28T-A	DIODE	D1001	MA1130M	ZENER DIODE
D408	MA28T-A	DIODE	D1002	MA162	DIODE
D409	MA1200M	DIODE	D1004	TVSRM1	DIODE
D410	MA151A	DIODE	D1005	MA1130	ZENER DIODE
D451	MA27W	DIODE	D1009	MA1130	ZENER DIODE
D482	MA162	DIODE	D1010	MA1130	ZENER DIODE
D483	MA162	DIODE	D1011	MA1130	ZENER DIODE
D484	MA162	DIODE	D1014	MA1130	ZENER DIODE
D503	TVSQA211M	ZENER DIODE	D1015	MA1130	ZENER DIODE
△D507	TVSQA207M3	ZENER DIODE	D1016	MA1130	ZENER DIODE
D508	TVSRM1Z	DIODE	D1017	MA1130	ZENER DIODE
D551	MA162	DIODE	D1018	MA1130	ZENER DIODE
			D1019	MA1130	ZENER DIODE

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
D1021	MA1062M	ZENER DIODE	D9208	TVSRG4YK2	DIODE
D1022	MA27T-B		△D9209	TVSC2406M	DIODE
D1201	MA150	DIODE	D9210	ESAC85009F9	DIODE
D1202	MA1051	ZENER DIODE	D9211	TVSQA212B	ZENER DIODE
D1203	MA150	DIODE	D9212	MA1150M	DIODE
D1204	MA150	DIODE	D9213	MA162	DIODE
D1205	MA150	DIODE	D9214	MA162	DIODE
D1402	MA150	DIODE	△D9215	ON3105	PHOTO COUPLER
D1403	MA162	DIODE	D9301	TVSB4402	DIODE
△D1404	MA1091	ZENER DIODE	D9302	TVSB4402	DIODE
D1405	MA162	DIODE	D9303	TVSC2408M	DIODE
D1407	MA162	DIODE	D9304	TVSQA212B	ZENER DIODE
D1408	TVSRU1	DIODE	△D9305	CTG-26SLF-I	DIODE
D1409	TVSRU2	DIODE	△D9306	MA1120M	ZENER DIODE
D1410	TVSRU2	DIODE	D9307	MA1150M	DIODE
D1411	TVSRU2	DIODE	△D9308	TVSRG2Z	DIODE
D1412	TVSEM1Z	DIODE	D9310	MA162	DIODE
D1413	TVSEM1Z	DIODE	D9311	MA162	DIODE
D1415	MA156	DIODE	△D9312	ON3105	PHOTO COUPLER
D1551	TVSC2715M	DIODE	D9401	TVSQB115ZB	ZENER DIODE
D1601	TVSRC2	DIODE	D9402	MA27T-B	
D1602	TVSRC2	DIODE	D9403	TVSQB115ZB	ZENER DIODE
D1701	TVSRC2	DIODE	D9404	MA27T-B	
D1801	TVSRC2	DIODE	D9405	MA1100H	ZENER DIODE
D1901	TVSRC2	DIODE	D9406	MA27T-B	
△D9001	TVSCO110	DIODE	I. C		
△D9002	TVSCO110	DIODE	IC10	TVS4LS04	IC (HEX INVERTER)
△D9003	TVSCO110	DIODE	IC11	TVS4LS10	IC (NAND GATE)
△D9004	TVSCO110	DIODE	IC12	TC4053BP	BLUE MODE SELECT
D9005	MA162	DIODE	IC13	TC4053BP	BLUE MODE SELECT
D9006	MA162	DIODE	IC14	TC4053BP	VIDEO/RGB SWITCHING
D9007	TVSQA209C	ZENER DIODE	IC15	AN610P	SHADING CORRECTION(R)
D9008	TVSQA211M	ZENER DIODE	IC16	AN610P	SHADING CORRECTION(G)
△D9009	ERZC10DK431	VARISTOR	IC17	AN610P	SHADING CORRECTION(B)
D9101	TVSRM10B	DIODE	IC18	AN5355	VIDEO/TEST SWITCHING
D9102	TVSQA211M	ZENER DIODE	IC19	TC4040BP	GROSSHATCH GENERATOR
D9103	MA162	DIODE	IC301	MN4066B	IC (SWITCH)
D9104	LN21RPHL	LED (RED)	IC302	AN5615	IC (VIDEO)
D9201	TVSB4402	DIODE	△IC401	AN5429	IC (DEF. SYNC)
D9202	TVSB4402	DIODE	IC405	AN90C23	SELECTOR
D9203	TVSC2408M	DIODE	IC406	AN90C23	SELECTOR
△D9204	ESAC85009	DIODE	IC501	AN90C23	SELECTOR
△D9205	TVSC2408M	DIODE	IC502	AN90C23	SELECTOR
D9206	TVSRG2Z	DIODE	IC551	BA236B	HD DELAY
△D9207	MA650	DIODE			

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
IC552	TVSTC4053BP	IC (MULTIPLEXER)	Q29	2SB709-R	EMITTER FOLLOWER
IC554	AN78M05LB	IC (VOLTAGE REG.)	Q30	2SD601-R	MIX
IC601	AN5625N	IC (PAL COLOR)	Q31	2SD601-R	EMITTER FOLLOWER
IC602	AN5635N	IC (SECAM COLOR)	Q32	2SD601-R	EMITTER FOLLOWER
IC671	AN5641	IC (SYSTEM)	Q33	2SB709-R	EMITTER FOLLOWER
IC701	TVSSTK4101M2	IC PWB	Q34	2SB709-R	EMITTER FOLLOWER
IC702	TVSSTK4101M2	IC PWB	Q35	2SB709-R	EMITTER FOLLOWER
IC703	TVSSTK4101M2	IC PWB	Q36	2SB709-R	EMITTER FOLLOWER
IC704	AN904	IC (DIFF AMP)	Q37	2SB709-R	EMITTER FOLLOWER
IC705	AN904	IC (DIFF AMP)	Q38	2SB709-R	EMITTER FOLLOWER
IC706	AN904	IC (DIFF AMP)	Q39	2SD601-R	BLACK LEVEL CLAMP
IC707	AN904	IC (DIFF AMP)	Q40	2SD601-R	BLACK LEVEL CLAMP
IC1001	AN78M05	IC (VOLTAGE REG.)	Q41	2SD601-R	BLACK LEVEL CLAMP
IC1002	TC4053BP	INPUT SELECT MANU/ REMO	Q42	2SD601-R	BLACK LEVEL CLAMP
IC1003	TC4053BP	INPUT SELECT MANU/ REMO	Q43	2SD601-R	BLACK LEVEL CLAMP
IC1004	TC4053BP	INPUT SELECT MANU/ REMO	Q44	2SD601-R	BLACK LEVEL CLAMP
IC1201	TVSTC4066BP	IC (SWITCH)	Q45	2SD601-R	BLACK LEVEL CLAMP
△IC9201	TNH11505AZ	OSC CONTROL ARD	Q46	2SD601-R	BLACK LEVEL CLAMP
△IC9301	TNH11505AZ	OSC CONTROL	Q47	2SB709-R	AMP.
TRANSISTORS			Q48	2SB709-R	AMP.
Q9	2SD601-R	BUFFER	Q49	2SB709-R	AMP.
Q10	2SD601-R	BUFFER	Q50	2SB709-R	EMITTER FOLLOWER
Q11	2SD601-R	BUFFER	Q51	2SB709-R	EMITTER FOLLOWER
Q12	2SC2295-B	AMP.	Q52	2SB709-R	EMITTER FOLLOWER
Q13	2SC2295-B	AMP.	Q53	2SD601-R	SAW WAVE CONTROL
Q14	2SC2295-B	AMP.	Q54	2SD601-R	AMP.
Q15	2SC2295-B	CLAMP	Q55	2SD601-R	V. SAW WAVE CONTROL
Q16	2SC2295-B	CLAMP	Q56	2SD601-R	EMITTER FOLLOWER
Q17	2SC2295-B	CLAMP	Q57	2SD601-R	INVERTER
Q18	2SD601-R	CLAMP	Q58	2SD601-R	INVERTER
Q19	2SD601-R	CLAMP	Q59	2SD601-R	SWITCH
Q20	2SD601-R	CLAMP	Q60	2SD601-R	SWITCH
Q21	2SB709-R	EMITTER FOLLOWER	Q61	2SD601-R	SWITCH
Q22	2SB709-R	MIX	Q62	2SB709-R	EMITTER FOLLOWER
Q23	2SB709-R	FINE BLUE COMPOSITION	Q63	2SB709-R	EMITTER FOLLOWER
Q24	2SB709-R	EMITTER FOLLOWER	Q64	2SB709-R	EMITTER FOLLOWER
Q25	2SD601-R	SQUARE WAVE	Q68	2SD601-R	INVERTER
Q26	2SD601-R	GENERATOR	Q69	2SB709-R	PROTECTOR
Q27	2SD601-R	SQUARE WAVE	Q70	2SD601-R	COMPOSITE SYNC ON
Q28	2SB709-R	GENERATOR	Q71	2SD601-R	PROTECTOR
		EMITTER FOLLOWER	Q72	2SD601-R	H. PULSE ON
		MIX	Q73	2SB709-R	INVERTER
		MIX	Q74	2SD601-R	INVERTER
			Q75	2SD601-R	INVERTER
			Q76	2SD601-R	MULTIVIBRATOR

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
Q77	2SD601-R	MULTIVIBRATOR	Q408	2SB709A-R	V-HOLD
Q78	2SD601-R	INVERTER	Q409	2SB709A-R	AMP.
Q79	2SD601-R	EMITTER FOLLOWER	Q410	2SB709A-R	AMP.
Q80	2SD601-R	MIX	Q411	2SB709A-R	AMP.
Q81	2SD601-R	MIX	Q412	2SB709A-R	AMP.
Q82	2SD601-R	MIX	Q413	2SB709A-R	AMP.
Q83	2SD601-R	INVERTER	Q414	2SC1685-R	AVR.
Q84	2SD601-R	TEST ON	Q451	2SC1505	V. DRIVE
Q85	2SD601-R	BLACK LEVEL CLAMP	Q452	2SC2168	V. OUT
Q86	2SD601-R	AMP.	Q453	2SA958F	V. OUT
Q87	2SD601-R	EMITTER FOLLOWER	Q481	2SD601A-R	AMP.
Q88	2SD601-R	INVERTER	Q482	2SD601A-R	AMP.
Q89	2SD601-R	INVERTER	Q483	2SD601A-R	SYNC SEPARATOR
Q90	2SD601-R	RGB ON	△ Q510	2SD601A-R	} SHUT DOWN
Q91	2SD601-R	SQUARE WAVE GENERATOR	△ Q511	2SB709A-R	
Q92	2SB709-R	V. BLANKING PULSE GENERATOR	△ Q512	2SD601A-R	
Q93	2SD601-R	V. BLANKING PULSE GENERATOR	Q551	2SD601A-R	AMP.
Q95	2SD601-R	RGB ON	Q553	2SD601A-R	SYNC SEPARATOR
Q301	2SD601-R	SWITCHING CONTROL	Q559	2SD601A-R	INVERTER
Q302	2SD601-R	} SYNC CLAMP	Q601	2SD601-R	PHASE SHIFT
Q303	2SB709-R		Q602	2SB709-R	APC FILTER SWITCH
Q304	2SB709-R	} EMITTER FOLLOWER	Q603	2SD601-R	BUFFER
Q305	2SD601-R		Q604	2SD601-R	IDENT GAIN SWITCH
Q306	2SD601-R	BUFFER	Q605	2SD601-R	SECAM KILLER SWITCH
Q307	2SD601-R	BUFFER	Q671	2SD601-R	
Q308	2SD601-R	AMP.	Q672	2SD601-R	SECAM KILLER SWITCH
Q309	2SD601-R	AMP.	Q673	2SD601-R	TRAP SWITCH
Q310	2SD601-R	BUFFER	Q674	2SD601-R	SECAM KILLER SWITCH
Q311	2SD601-R	VIDEO AMP.	Q675	2SD601-R	SWITCHING
Q312	2SB709-R	VIDEO AMP.	Q676	2SD601-R	50 Hz/60 Hz SWITCH
Q313	2SB709-R	BUFFER	Q701	2SD601A-R	WAVEFORM SHAPING
Q314	2SD601-R	} C-Y MATRIX (R)	Q702	2SD601A-R	WAVEFORM SHAPING
Q315	2SB709-R		Q703	2SD601A-R	AMP.
Q316	2SB709-R	} C-Y MATRIX (G)	Q705	2SD601A-R	EMITTER FOLLOWER
Q317	2SD601-R		Q706	2SD601A-R	EMITTER FOLLOWER
Q318	2SB709-R	} C-Y MATRIX (B)	Q707	2SD601A-R	EMITTER FOLLOWER
Q319	2SB709-R		Q708	2SD601A-R	EMITTER FOLLOWER
Q320	2SD601-R	} C-Y MATRIX (B)	Q709	2SD601A-R	EMITTER FOLLOWER
Q321	2SB709-R		Q712	2SD601A-R	} H. PARABOLA WAVE AMP.
Q322	2SB709-R	} C-Y MATRIX (B)	Q713	2SD601A-R	
Q323	2SD601-R		Q714	2SD601A-R	EMITTER FOLLOWER
Q324	2SD601-R	BUFFER	Q715	2SD601A-R	SWITCHING
Q325	2SD601-R	SWITCHING	Q716	2SD601A-R	EMITTER FOLLOWER
Q326	2SD601-R	SWITCHING	Q717	2SD601A-R	INVERTER
Q327	2SD601-R	SWITCHING	Q718	2SD601A-R	AMP.



Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
Q719	2SD601A-R	EMITTER FOLLOWER	Q1010	2SC1685-Q	PHSTER OFF SW.
Q720	2SD601A-R	CORNER CORRECTION WAVE GENERATOR	Q1201	2SC1685-Q	SYNC. SEPARATOR
Q721	2SB709A-R		Q1202	2SA564A	
Q722	2SD601A-R		Q1203	2SC1685-Q	
Q723	2SD601A-R		Q1204	2SC1685-Q	
Q724	2SB709A-R		Q1205	2SC1685-Q	
Q725	2SD601A-R		Q1206	2SC1685-Q	VIDEO SEPARATOR
Q726	2SD601A-R		Q1207	2SC1685-Q	
Q727	2SD601A-R		Q1208	2SC1685-Q	
Q728	2SB709A-R		Q1209	2SC1685-Q	
Q729	2SD601A-R		Q1210	2SC1685-Q	
Q730	2SD601A-R		Q1211	2SC1685-Q	
Q731	2SB709A-R	SWITCHING EMITTER FOLLOWER OVER CORRENT PROTECT OVER CORRENT PROTECT EMITTER FOLLOWER EMITTER FOLLOWER SWITCHING H. SAW TOOTH WAVE EMITTER FOLLOWER EMITTER FOLLOWER EMITTER FOLLOWER	Q1212	2SC1685-Q	
Q732	2SD601A-R		Q1213	2SC1685-Q	
Q733	2SB709A-R		Q1214	2SC1685-Q	
Q734	2SB709A-R		Q1215	2SC1685-Q	
Q735	2SD601A-R		Q1216	2SC1685-Q	
Q736	2SD601A-R		Q1217	2SA564-R	
Q737	2SB709A-R		Q1218	2SA564-R	
Q738	2SD601A-R		Q1219	2SC1685-Q	SWITCHING CONTROL SYNC. INVERSION SW. SYNC. INVERSION SW. SYNC. SEPARATION VOLTAGE COMPENSATOR LINEALITY CORRECTION HV-DRIVE HV-REGULATOR HIGH VOLTAGE REGULATOR HIGH VOLTAGE REGULATOR HV-REGULATOR HIGH VOLTAGE REGULATOR HIGH VOLTAGE REGULATOR
Q739	2SD601A-R		Q1220	2SC1685-Q	
Q740	2SD601A-R		Q1221	2SC1685-Q	
Q741	2SD601A-R		Q1222	2SC1685-Q	
Q742	2SD601A-R		Q1401	2SC1573-Q	
Q981	2SD601A-R	KEYSTONE CORRECTION SIDE PIN CORRECTION AMP. EMITTER FOLLOWER OVER CORRENT PROTECT SIDE EDGE CORRECTION CORNER CORRECTION WAVE GENERATOR AMP. EMITTER FOLLOWER EMITTER FOLLOWER EMITTER FOLLOWER	Q1402	2SC1573-Q	
Q982	2SD601A-R		Q1403	2SC1505	
Q983	2SD601A-R		△Q1404	2SD1457A	
Q984	2SD601A-R		△Q1405	2SC1573-Q	
Q985	2SD601A-R		△Q1406	2SC1685-R	
Q986	2SD601A-R		Q1407	2SD1175	
Q987	2SD601A-R		△Q1408	2SC1573-Q	
Q988	2SB709A-R		△Q1409	2SC1573-Q	
Q989	2SD601A-R		Q1501	2SC1573-R	KEYSTONE AMP. SIDE PINCUSHION AMP. REGULATOR REGULATOR RIPPLE FILTER RIPPLE FILTER PINCUSHION AMP. AMP.
Q990	2SB709A-R		Q1502	2SC1573-R	
Q991	2SB709A-R		Q1503	2SC1573-R	
Q992	2SD601A-R		Q1504	2SC1573-R	
Q993	2SD601A-R		Q1505	2SC1573-R	
Q994	2SD601A-R		Q1506	2SC1573-R	
Q995	2SD601A-R		Q1507	2SA879-P	
Q1001	2SA564A		Q1508	2SA879-P	
Q1002	2SC1685-Q		Q1509	2SC1573-R	
Q1003	2SC1685-Q		Q1510	2SC1573-R	
Q1004	2SA564A	EMITTER FOLLOWER	Q1511	2SD1457A	
Q1005	2SD1273	RGB/COMP OFF RGB ON COMP ON AVR	Q1512	2SC1573-R	

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
Q1513	2SC1573-R	AMP.		TJS118930	36P CONNECTOR
Q1514	2SC1685-R	AMP.		TJS148500	CONNECTOR
Q1551	2SC1505	H-DIRVE		TJS168440	3P SHORT PLUG
Q1552	2SD1175	H. OUT		TJS168960	2P CONNECTOR
Q1601	2SC1685-R	INVERTER			
Q1602	2SC1685-R	INVERTER		TJS168970	3P CONNECTOR
Q1603	2SD1346	INVERTER		TJS168980	4P CONNECTOR
Q1701	2SC1819M	R OUT		TJS168990	5P CONNECTOR
Q1801	2SC1819M	G OUT		TJS169010	CONNECTOR
Q1901	2SC1819M	B OUT		TJS169020	8P CONNECTOR
Q9001	2SC1573B	REGULATOR		TJS169030	10P CONNECTOR
Q9002	2SC1573B	REGULATOR		TJS169040	12P CONNECTOR
Q9101	2SD1273	12V REGULATOR		TJS169050	CONNECTOR (15P)
Q9201	2SD1539	SWITCHING DRIVE		TJS169061	2P CONNECTOR
Q9202	2SB1071	SWITCHING OUT		TJS169071	CONNECTOR
△Q9203	2SC3507	SWITCHING OUT		TJS169081	CONNECTOR
Q9301	2SD1539	SWITCHING DRIVE		TJS169121	CONNECTOR 10P
Q9302	2SB1071	SWITCHING DRIVE		TJS169131	CONNECTOR
△Q9303	2SC3507	SWITCHING OUT		TKG139964	LENS (R/G)
Q9401	2SD1273	17V AVR		TKG139965	LENS (B)
Q9402	2SB941	-17V AVR		TKK130719	LENS CAP
Q9403	2SD1273	12V AVR		TKN13511	FAN NET
Q9404	2SC1318-R	27V REGULATOR		TKP1311512-1	CONVER DOOR
OTHERS				TKP1311532-2	FRONT PANEL
	EMCS0352M	3P CONNECTOR		TKR23340	FAN GUARD
	FBP-12A24LZD	DC FAN		TKR23400	FAN METAL
	TBM130160	MODEL NAME PLATE (PT-102N)		TKR23410	PLATE
	TBM130161	MODEL NAME PLATE (PT-102GN)		TKR23430	METAL FLAME (L)
	TBM130205	MODUL NAME PLATE (PT102AN)		TKR23440	METAL FLAME (R)
	TBM130204	MODEL NAME PLATE (PT-102SN)		TKR23450	METAL FLAME
	TBM17036-1	NAME PLATE		TKR23520	CALAR
	TBX1386500	SELECTOR BUTTON		TKP1311522	OPERATION DOOR
	TBX1550302	POWER BUTTON		TKY131701-1	UPPER CABINET
	TEK17911	DOOR LOCK SWITCH		TKY131801-1	BOTTOM CABINET
	TES4583	SPRING		TLY15229F	DEFLECTION YOKE (G)
	TES7151	SPRING			
	THE600	BOLT		TLY15230F	DEFLECTION YOKE (R)
	THE757	BOLT		TLY15231F	DEFLECTION YOKE (B)
	THW70023W	WASHER			
	THW70024	WASHER		TMM15205	CRT SOCKET COVER
	TJS1A5060	CRT SOCKET		TNP100066	CIRCUIT BOARD F
	TJS1A8220	25P CONNECTOR		TNP51568BZ	CIRCUIT BOARD Q
△	TJS118070	AC SOCKET		TNP51569BZ	CIRCUIT BOARD P
	TJS118920	50P CONNECTOR		TNP51570CZ	CIRCUIT BOARD K
				TNP52504AZ	CIRCUIT BOARD V
				TNP52907	CIRCUIT BOARD R
				TNP55165	CIRCUIT BOARD A
				TNP55166	CIRCUIT BOARD B
				TNP55167	CIRCUIT BOARD S
				TNP55168	CIRCUIT BOARD T

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
	TNP55169	CIRCUIT BOARD M		TJC6320	FUSE HOLDER
	TNP55180	CIRCUIT BOARD G	N1401	XANT343	NEON LAMP
	TNP60975CB	CIRCUIT BOARD LR	ΔRL9101	TSE1827	RELAY
	TNP60976CB	CIRCUIT BOARD LG			
	TNP60977CB	CIRCUIT BOARD LB	S1	ESD32170	TERMINATER RESISTOR
	TNP100265AA	CIRCUIT BOARD X	S2	ESD32170	SWITCH
	TNP62344AZ	CIRCUIT BOARD D			SYNC./G SELECTOR
	TNP62345ZA	CIRCUIT BOARD TR1	S10	TSE392	SWITCH
	TNP62346ZA	CIRCUIT BOARD TR2			NORMAL/SERVICE
	TNP62358ZA	CIRCUIT BOARD Z	S1201	ESD3228	SWITCH
	TNP62368ZA	CIRCUIT BOARD H1			SYNC. INVERTION
	TNP62369ZA	CIRCUIT BOARD H2	S3001	TSE10418	SWITCH
	TNP62372ZA	CIRCUIT BOARD Y	S3002	ESD32176	POWER SWITCH
					BLUE SELECTOR
					SWITCH
	TNP66417AZ	CIRCUIT BOARD C			
	TNP66418	CIRCUIT BOARD J	S3003	TSE10417	INPUT SELECTOR
	TNX13013	H.V. DISTRIBUTER			SWITCH
	TNX13017	FOCUS PACK	S7002	TSE389	RASTER OFF SWITCH
	TPC1341201	OUTER CARTON	S7003	TSE389	RASTER OFF SWITCH
		(PT-102N)			
	TPC1341203	OUTER CARTON	S7004	TSE389	RASTER OFF SWITCH
		(PT-102GN)	S7005	EVQRBAL10	TV/VTR SWITCH
	TPC1341204	OUTER CARTON	S8001	ESD32170	TEST SWITCH
		(PT-102SN)	S8002	TSE182	SYSTEM SWITCH
	TPC1341205	OUTER CARTON	ΔS9001	ESB99577V	MAIN POWER SWITCH
		(PT-102AN)			
	TPD131066	CUSHION (UPPER)	S9002	TSE960	GUARD SWITCH
	TPD131067	CUSHION (UPPER)	X601	TSS816M	CRYSTAL OSCILLATOR
	TPD132066	CUSHION (BOTTOM)	X602	TSS116M1	CRYSTAL
	TPD132067	CUSHION (BOTTOM)		TKZ178116	LOCK SCREW
	TPE174054	SEET		TKX132801	LENS GRIL
	TQB510046	INSTRUCTION BOOK		THE765	SCREW
Δ	TSX3189	POWER SUPPLY CORD		TMX139818	LENS SPACER
		(PT-102N)			(ONLY FOR 50" R/B)
Δ	TSX3105	POWER SUPPLY CORD		TMX13917	LENS SPACER
		(PT-102GN)			(ONLY FOR 50" G)
Δ	TSX3197	POWER SUPPLY CORD		TMX13920	LENS SPACER
		(PT-102AN)			(ONLY FOR 70" R/B)
Δ	TSX5119	POWER SUPPLY CORD		TMX13919	LENS SPACER
		(PT-102SN)			(ONLY FOR 70" G)
Δ	TXFCRTRFLZ	PICTURE TUBE (R)			
Δ	TXFCRTGFLZ	PICTURE TUBE (G)		TMX13922	LENS SPACER
Δ	TXFCRTBFLZ	PICTURE TUBE (B)			(ONLY FOR 120" R/B)
	TXFKRO1BE6	METAL ASS.Y		TMX13921	LENS SPACER
	XNG10B	NUT			(ONLY FOR 120" G)
	XTS3+12BFZ	SCREW		THN2986T	WASHER
	THT950-2	SCREW		TKR23420	FIXING METAL
	XWB10B	WASHER			
	XWH10	WASHER			
	XYN3+C6S	SCREW			
Δ F2	XBA2C31TR0	FUSE 250V 3.15A			
	TPD139177	CARTON			

# Service Manual

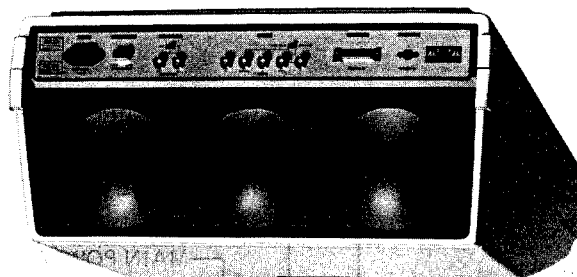


V11879

Colour Video Projector  
**PT-102Y/GY**

**chassis No. Q5**

GY ..... U.K. Only



Please file and use this service manual together with the service manual for Model No. PT-102N/GN/AN/SN, Order No. VED86090024C3 and the supplement manual for Model No. PT-102N/GN/AN/SN, Order No. VED88030077S1.

## Specifications

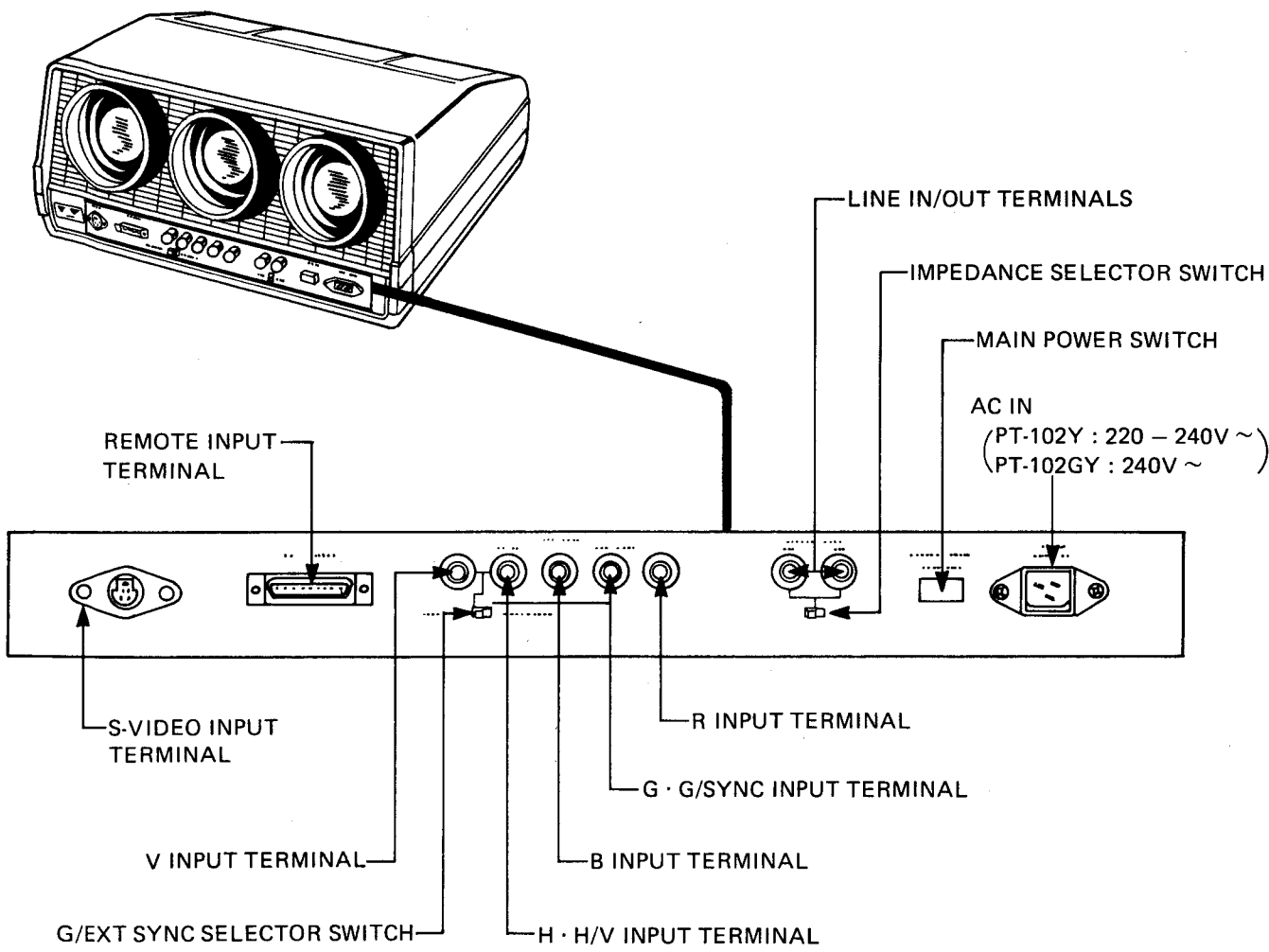
Power Source:	AC 220V ~ 240V, 50/60 Hz (PT-102Y) AC 240V, 50 Hz (PT-102GY)	2540 mm (100 inches) Picture size: 3037 mm (119 19/32 inches)
Power Consumption:	189W	3048 mm (120 inches) Picture size: 3635 mm (143 3/32 inches)
Projection Tube:	7 inch specially developed high-Brightness liquid cooled CRTs (R, G, B).	650 lumens (typical) at white peak
Lenses:	Double Focus; Three F1.0 f145 Lenses (HYBRID)	Light Flux:
Resolution:	Video..... 650 TV Lines (typical) RGB..... 1000 TV Lines (typical)	Operating Ambient Temperature: 32°F ~ 104°F (0°C ~ +40°C)
S-Video Input Level:	Y: $1 \pm 0.3\text{Vp-p } 75\Omega$ , C : $0.286\text{Vp-p}$	Operating Ambient Humidity: 20% ~ 80%
Line in/out Level:	$1 \pm 0.3\text{Vp-p } 75\Omega$ or high impedance	Supplied Accessories: AC Cord (PT-102Y) AC Mains Lead (PT-102GY) Mounting Kit (1 set)
RGB Input Level:	R: $0.7 \pm 0.3\text{Vp-p } 75\Omega$ G: $0.7 \pm 0.3\text{Vp-p } 75\Omega$ (G/SYNC: $1 \pm 0.3\text{Vp-p } 75\Omega$ ) B: $0.7 \pm 0.3\text{Vp-p } 75\Omega$ H·H/V: 0.3 ~ 6V, high impedance V: 0.3 ~ 6V, high impedance	SPACER G: TMX13917, TMX13919 B, R: TMX13918, TMX13920
Screen Size:	1270 ~ 3048 mm (50 ~ 120 inches)	Dimensions: Width: 576 mm (22 11/16 inches) Depth: 606 mm (23 29/32 inches) Height: 290 mm (11 13/32 inches)
Throw Distance:	1270 mm (50 inches) Picture size: 1670 mm (65 3/4 inches) 1829 mm (72 inches) Picture size: 2210 mm (87.0 inches)	Mass (weight): 77 lbs. (35 kg)

Specifications are subject to change without notice.  
Weight and dimensions shown are approximate.

# Panasonic

**Matsushita Electric Industrial Co., Ltd.**  
Central P.O. Box 288, Osaka 530-91, Japan

LOCATION OF CONTROLS



CHANGE OF REF. NO.

- Please change the Ref. No. on A-Board to the Ref. No. 3000 series.

Application	Part No.
A-Board	TNP100911
Parts	All Parts : Ref. No. 300 series and 600 series
Example	R301 → R3301 C601 → C3601 D301 → D3301

## CHANGE OF PARTS LIST

- This parts list indicates the differences between; PT-102N/GN and PT-102Y/GY.

Ref. No.	Part No.		Description			
	PT-102N/GN	PT-102Y/GY				
RESISTORS						
R1	ERD25FJ750	_____	_____			
R3	ERD25FJ750	_____	_____			
R4	ERD25FJ750	_____	_____			
R5	ERD25FJ750	_____	_____			
R3612	ERJ8GCZJ395	ERJ8GCYJ125	M	1.2M OHM,	J,	1/8W
R617	ERJ8GCYJ183	_____	_____			
R1264	ERD25TJ681	_____	_____			
R1269	ERD25TJ330	ERD25FJ1R0K	C	1 OHM,	J,	1/4W
R1270	_____	ERD25FJ750K	C	75 OHM,	J,	1/4W
R3008	ERD25FJ103	ERD25FJ822K	C	8.2K OHM,	J,	1/4W
R3009	EVJFMAEA4B53	EVJFNAEA4B14	CONTROL 10K OHMB			
R3400	_____	ERJ8GCYJ102	M	1K OHM,	J,	1/8W
R3401	_____	ERJ8GCYJ102	M	1K OHM,	J,	1/8W
R3403	_____	ERJ8GCYJ104	M	100K OHM,	J,	1/8W
R3404	_____	ERJ8GCYJ273	M	27K OHM,	J,	1/8W
R3405	_____	ERD25FJ750K	C	75 OHM,	J,	1/4W
R3701	_____	ERJ8GCYJ104	M	100K OHM,	J,	1/8W
R3702	_____	ERJ8GCYJ222	M	2.2K OHM,	J,	1/8W
R3703	_____	ERJ8GCYJ333	M	33K OHM,	J,	1/8W
R3704	_____	ERJ8GCYJ104	M	100K OHM,	J,	1/8W
R3705	_____	ERJ8GCYJ391	M	390 OHM,	J,	1/8W
R3706	_____	ERJ8GCYJ332	M	3.3K OHM,	J,	1/8W
R3707	_____	ERJ8GCYJ683	M	68K OHM,	J,	1/8W
R3708	_____	ERJ8GCYJ104	M	100K OHM,	J,	1/8W
R3709	_____	ERJ8GCYJ333	M	33K OHM,	J,	1/8W
R3710	_____	ERJ8GCYJ104	M	100K OHM,	J,	1/8W
R3711	_____	ERJ8GCYJ391	M	390 OHM,	J,	1/8W
R3712	_____	ERJ8GCYJ332	M	3.3K OHM,	J,	1/8W
R3713	_____	ERJ8GCYJ683	M	68K OHM,	J,	1/8W
R3714	_____	ERJ8GCYJ104	M	100K OHM,	J,	1/8W
R3715	_____	ERJ8GCYJ333	M	33K OHM,	J,	1/8W
R3716	_____	ERJ8GCYJ104	M	100K OHM,	J,	1/8W
R3717	_____	ERJ8GCYJ391	M	390 OHM,	J,	1/8W
R3718	_____	ERJ8GCYJ332	M	3.3K OHM,	J,	1/8W
R3719	_____	ERJ8GCYJ683	M	68K OHM,	J,	1/8W
R3723	_____	ERJ8GCYJ391	M	390 OHM,	J,	1/8W
R3724	_____	ERJ8GCYJ332	M	3.3K OHM,	J,	1/8W
R3725	_____	ERJ8GCYJ683	M	68K OHM,	J,	1/8W
R3727	_____	ERD25FJ750K	C	75 OHM,	J,	1/4W



Ref. No.	Part No.		Description
	PT-102N/GN	PT-102Y/GY	
R3728	_____	ERJ8GCYJ222	M 2.2K OHM, J, 1/8W
R3729	_____	ERJ8GCYJ154	M 150K OHM, J, 1/8W
<b>CAPACITORS</b>			
C3608	ECQM1H272JV	ECQM1H472JV	P 4700PF, J, 50V
C3690	_____	ECUX1H103KBM	C 0.01UF, K, 50V
C3691	_____	ECUX1H103KBM	C 0.01UF, K, 50V
C3692	_____	ECUX1H102KBM	C 1000PF, K, 50V
C3693	_____	ECUX1H103KBM	C 0.01UF, K, 50V
C3694	_____	ECUX1H103KBM	C 0.01UF, K, 50V
C3695	_____	ECUX1H103KBM	C 0.01UF, K, 50V
C3696	_____	ECUX1H821KBM	C 820PF, K, 50V
<b>COIL</b>			
L3630	_____	ELT10Z327	COIL
<b>DIODES</b>			
D3311	_____	MA151K	DIODE
D3678	_____	MA151K	DIODE
D3679	_____	MA1110	DIODE
<b>TRANSISTORS</b>			
Q3330	_____	2SD601AR	TRANSISTOR
Q3681	_____	2SD601AR	TRANSISTOR
Q3682	_____	2SD601AR	TRANSISTOR
Q3683	_____	2SD601AR	TRANSISTOR
Q3684	_____	2SD601AR	TRANSISTOR
Q3685	_____	2SD601AR	TRANSISTOR
Q3686	_____	2SD601AR	TRANSISTOR
Q3687	_____	2SD601AR	TRANSISTOR
Q3688	_____	2SD601AR	TRANSISTOR
Q3701	_____	2SD601AR	TRANSISTOR
<b>RELAY</b>			
RL3701	_____	TSE1865	RELAY
<b>TERMINAL</b>			
JK3001	_____	TJS2A8760	S-VIDEO TERMINAL
<b>OTHERS</b>			
	TKP1311532-2	TKP1311532-4	FRONT PANEL
	TQB510046	TQB510076	INSTRUCTION BOOK
	TNP55165	TNP100911	A BOARD
	TNP55168	TNP55168AZ	T BOARD
	TNP55180	TNP55180AZ	G BOARD
	_____	TNP100912	E BOARD
	TNP55167	TNP55167AZ	S BOARD

Ref. No.	Part No.		Description
	PT-102N/GN	PT-102Y/GY	
MODEL NAME PLATE			
	TBM130160	TBM130334	PT-102Y
	TBM130161	TBM130336	PT-102GY
OUTER CARTON			
	TPC1341201	TPC1341206	PT-102Y
	TPC1341203	TPC1341208	PT-102GY

## CHANGE OF ADJUSTMENTS

- Refer to section 6 on page 15.

### PT-102N/GN

#### 6. VERTICAL HEIGHT ADJUSTMENT

##### 2) VIDEO MODE

1. Receive a PAL Phillips pattern signal.
2. Adjust the Video V-Size control VR (R428) to achieve a pattern height of 1957 mm.
3. Set the Input signal selector SW. (S3003) to VIDEO and receive an NTSC monoscope pattern signal.
4. Adjust the NTSC Sub V-Size control VR (R432) to achieve a pattern height of 1957 mm.

##### 3) RGB MODE

1. Set the Input signal selector SW. (S3003) to RGB.
2. Receive an RGB signal from an RGB signal generator.
3. Adjust the RGB V-Size control VR (R437) to achieve a pattern height of 1957 mm.



### PT-102Y/GY

#### 6. VERTICAL HEIGHT ADJUSTMENT

##### 2) VIDEO MODE

1. Receive a PAL Phillips pattern signal.
2. Adjust the Video V-Size control VR (R428) to achieve a pattern height of 1631 mm.
3. Set the Input signal selector SW. (S3003) to VIDEO and receive an NTSC monoscope pattern signal.
4. Adjust the NTSC Sub V-Size control VR (R432) to achieve a pattern height of 1631 mm. — Change

##### 3) RGB MODE

1. Set the Input signal selector SW. (S3003) to RGB.
2. Receive an RGB signal from an RGB signal generator.
3. Adjust the RGB V-Size control VR (R437) to achieve a pattern height of 1631 mm. — Change

- Refer to section 7 on page 15 and 16.

### PT-102N/GN

#### 7. HORIZONTAL WIDTH ADJUSTMENT

##### 2) VIDEO MODE

1. Receive an PAL Phillips pattern signal.
2. Adjust the Video H-Size control VR (R1541) to achieve a pattern width of 2609 mm.

##### 3) RGB MODE

1. Set the Input signal selector SW. (S3003) to RGB.
2. Receive an RGB signal from an RGB signal generator.
3. Adjust the RGB H-Size control VR (R1536) to achieve a pattern width of 2609 mm.



### PT-102Y/GY

#### 7. HORIZONTAL WIDTH ADJUSTMENT

##### 2) VIDEO MODE

1. Receive an PAL Phillips pattern signal.
2. Adjust the Video H-Size control VR (R1541) to achieve a pattern width of 2174 mm. — Change

##### 3) RGB MODE

1. Set the Input signal selector SW. (S3003) to RGB.
2. Receive an RGB signal from an RGB signal generator.
3. Adjust the RGB H-Size control VR (R1536) to achieve a pattern width of 2174 mm. — Change

## CHANGE OF SCHEMATIC DIAGRAM

- For A/G/T/E-Board sections, Refer to this manual only.
- For other Board sections, Refer to the service manual for PT-102N/GN.

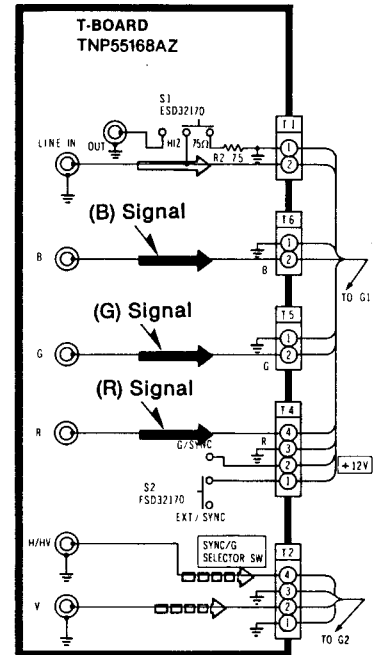
### (G/T-BOARD Sections) ← Video Signal

#### Note:

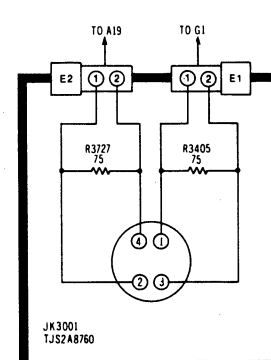
##### 1. RESISTOR

For G/T/E-Board sections, all resistors are carbon 1/4W resistor and for A-Board section, all resistors are carbon 1/8W resistor, unless otherwise noted the following marks.  
Unit of resistance is OHM ( $\Omega$ ) (K= 1,000, M = 1,000,000).

- |  |                                    |
|--|------------------------------------|
| $\Delta$ : Solid                         | $\otimes$ : Fuse                   |
| $\square$ : Wire Wound                   | $\bullet$ : Metal Oxide            |
| $\textcircled{F}$ : Non-Flamable         | $\textcircled{L}$ : Lead Less Type |
| $\textcircled{\circ}$ : Fixed Metal Film |                                    |



IC601																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	
PAL	2.6V	0V	2.5V	1.9V	7.9V	0V	1.2V	7.0V	6.4V	8.8V	11.2V	7.8V	9.4V	0V	11.2V	7.6V	3.1V	0V	6.1V	5.2V	7.0V	6.4V	6.7V
NTSC	2.6V	0V	2.6V	1.8V	7.8V	0V	1.2V	6.9V	6.4V	8.6V	11.2V	7.9V	9.4V	-0.1V	9.2V	11.2V	3.1V	0V	3.6V	6.4V	6.7V	6.2V	6.7V



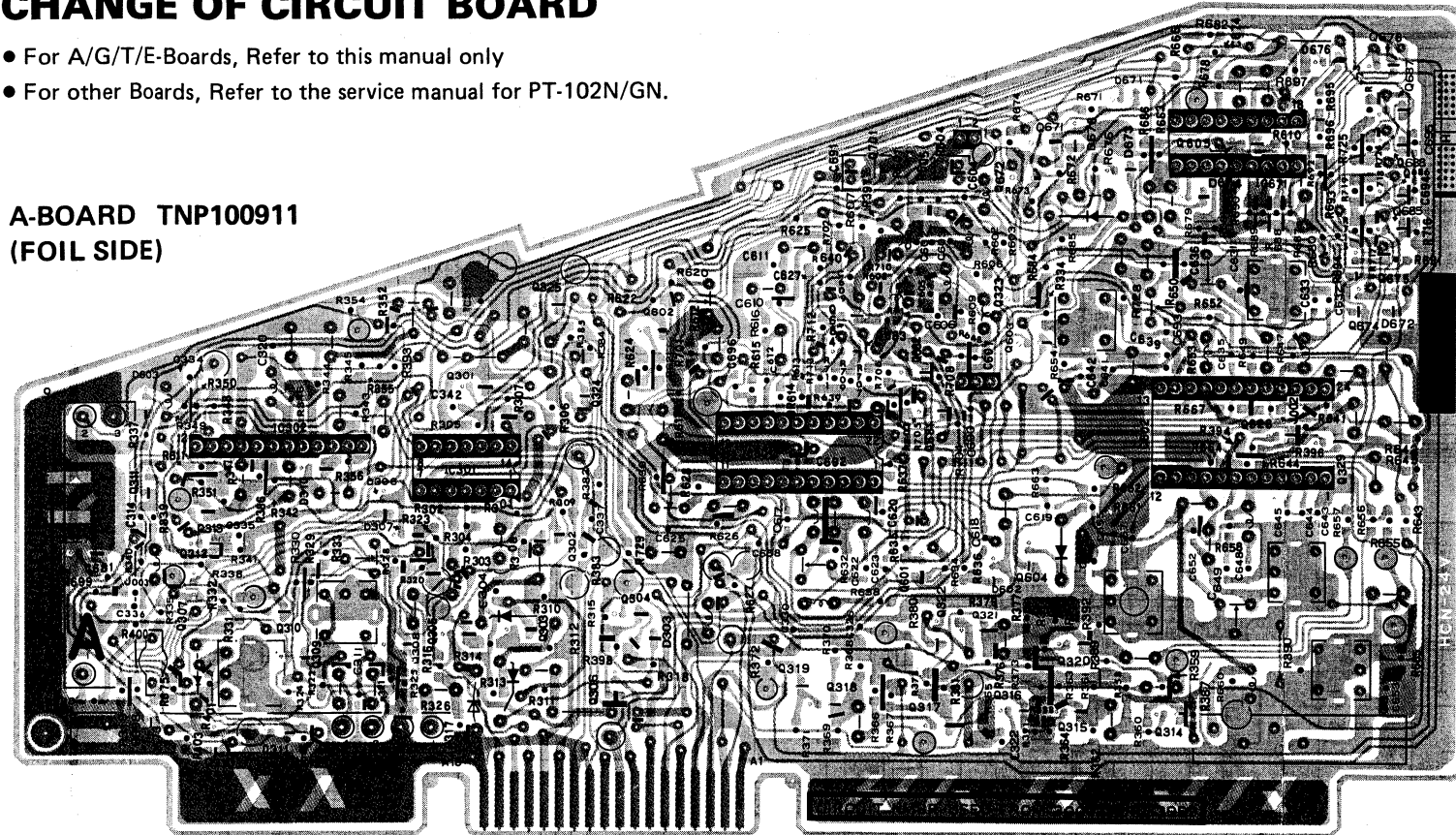
IC871	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
SEGAM	7.6V	0.3V	11.6V	11.8V	0V	0.2V	11.7V	0.2V	11.9V	7.4V	11.2V	0.1V	11.8V	6.6V	11.8V	5.1V	2.7V	3.3V
PAL	7.6V	0.3V	11.6V	11.8V	0V	0.2V	0V	0.2V	11.9V	9.4V	11.2V	1.0V	11.8V	6.6V	11.8V	5.1V	0V	3.3V
NTSC	0.2V	9.1V	11.6V	11.8V	0V	0V	1.2V	0.2V	11.9V	9.4V	11.2V	1.5V	11.8V	11.6V	11.8V	5.1V	0V	3.3V

IC802	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
SECAM	6.7V	6.9V	7.1V	4.8V	10.2V	4.8V	3.2V	0.1V	3.2V	3.3V	0V	3.3V	0V	2.3V	3.2V	11.7V	7.4V	3.0V	0.3V	3.2V	4.8V	4.9V	10.1V	5.1V
PAL	7.0V	7.0V	6.4V	4.8V	10.2V	4.7V	3.2V	1.1V	2.5V	7.5V	0V	3.3V	0V	2.3V	3.2V	11.7V	7.2V	2.4V	0.3V	3.2V	4.9V	4.9V	10.1V	5.1V

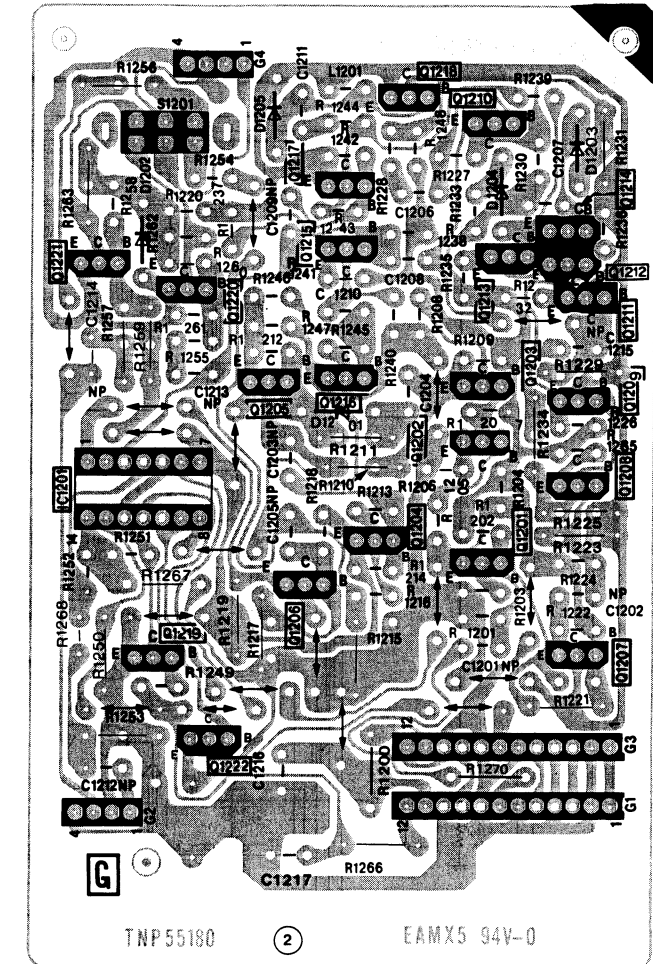
## CHANGE OF CIRCUIT BOARD

- For A/G/T/E-Boards, Refer to this manual only
- For other Boards, Refer to the service manual for PT-102N/GN.

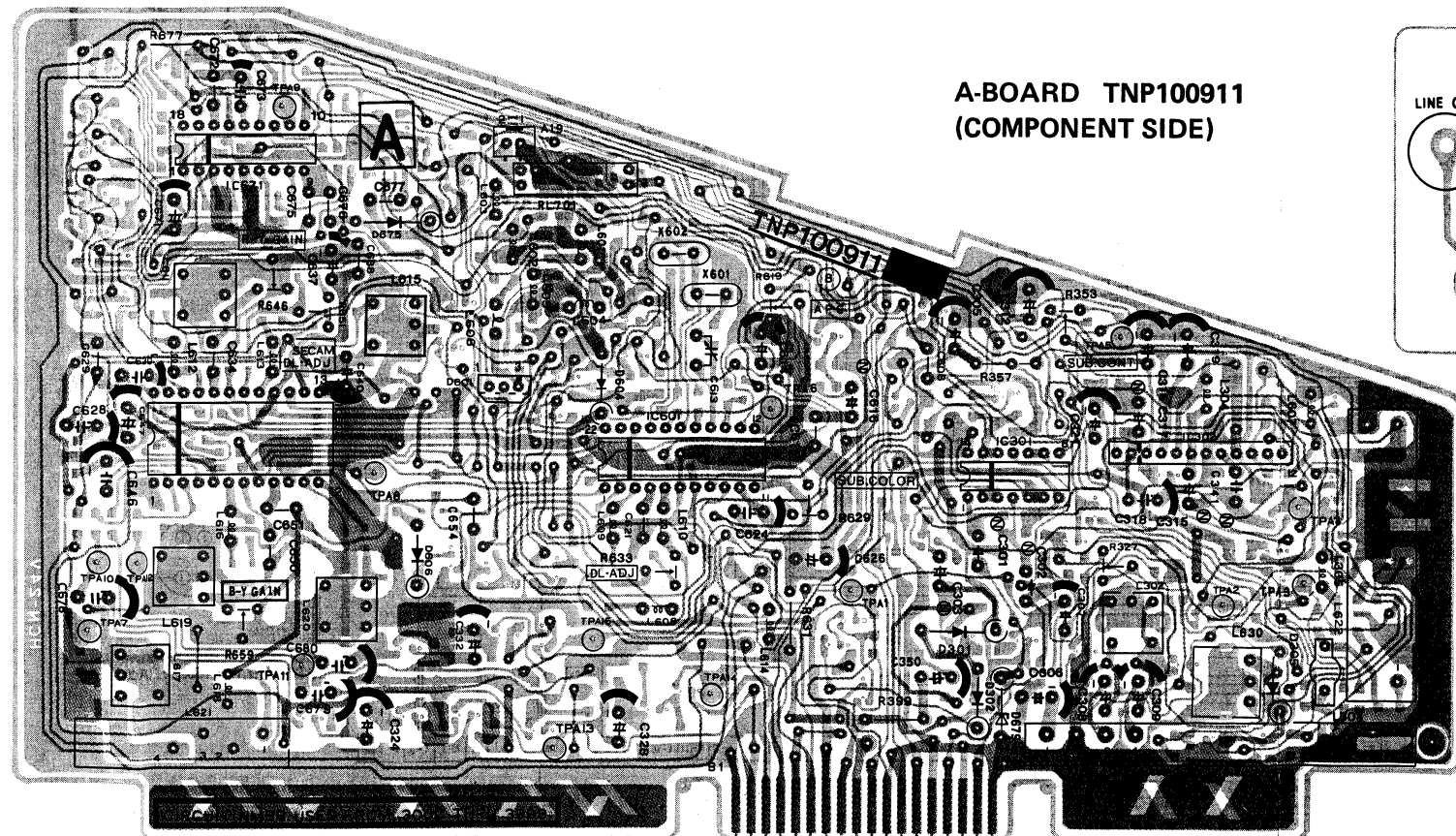
A-BOARD TNP100911  
(FOIL SIDE)



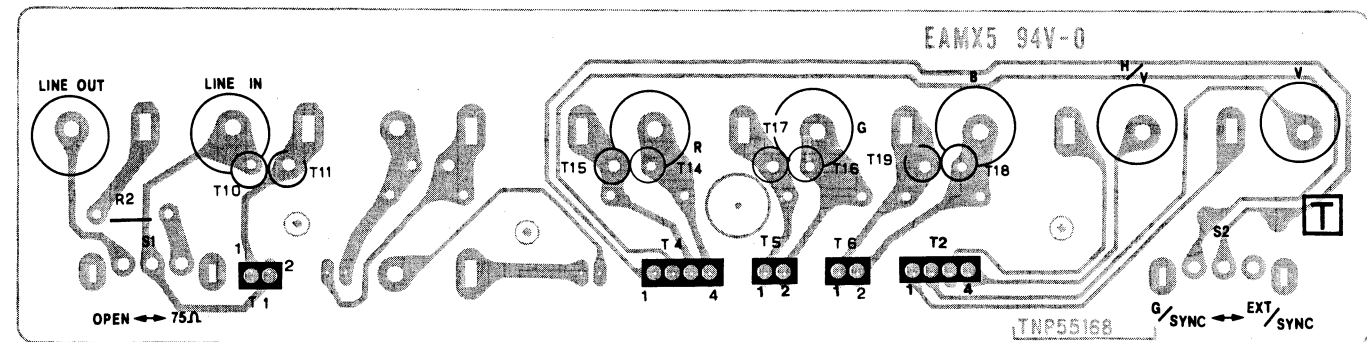
G-BOARD TNP55180AZ



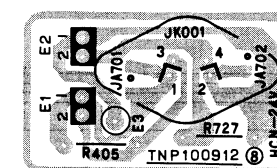
A-BOARD TNP100911  
(COMPONENT SIDE)



T-BOARD TNP55168AZ



E-BOARD TNP100912



CHIP TRANSISTOR  
PIN CONNECTION

